The OIL WEEKLY

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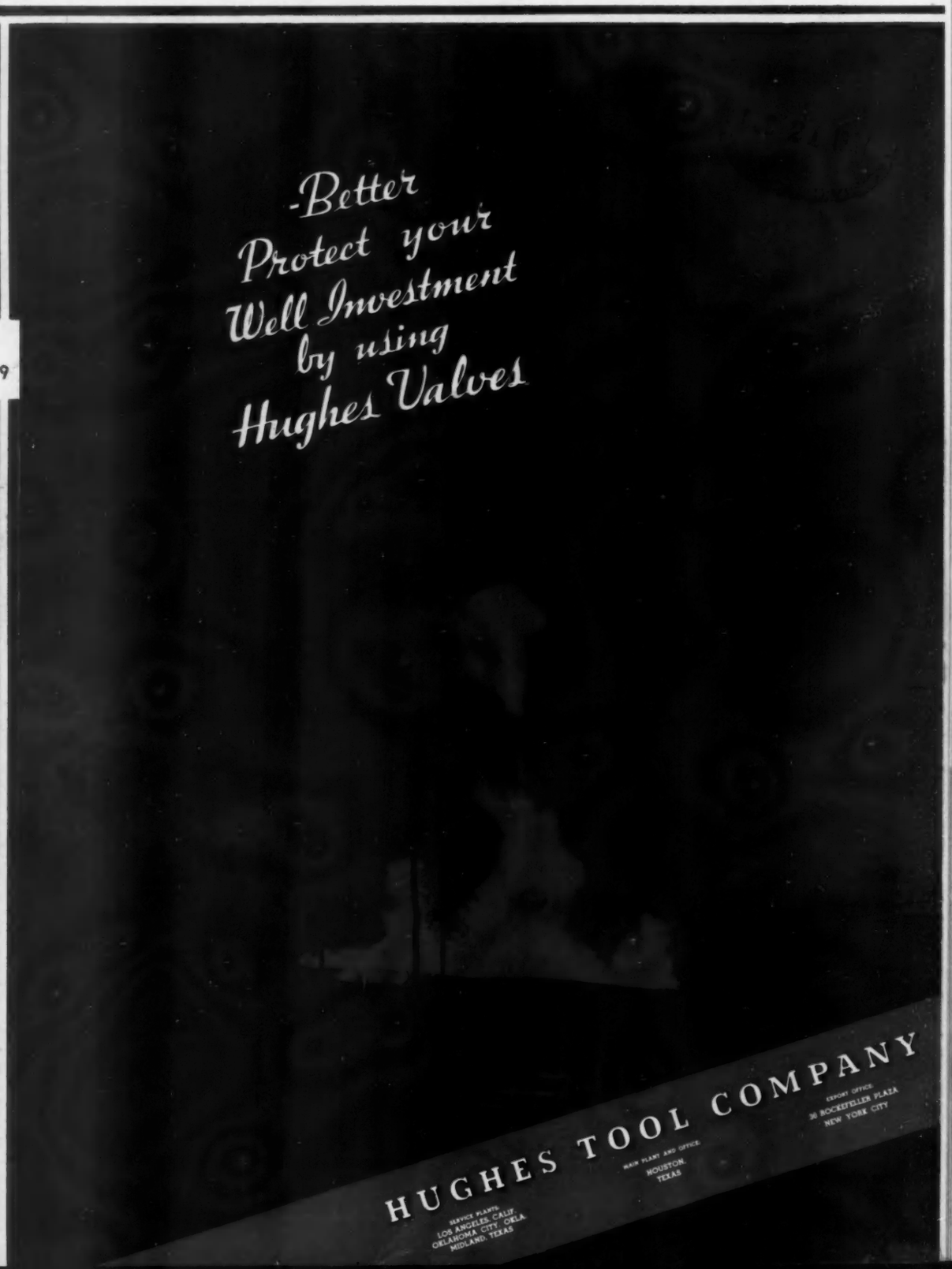
OIL and GAS ENGINEERING

FOR OIL AND GAS PRODUCTION AND PIPE LINE DIVISIONS

THE WEEK'S NEWS INTERPRETED

MAY 13, 1935
ne 77 Number 9



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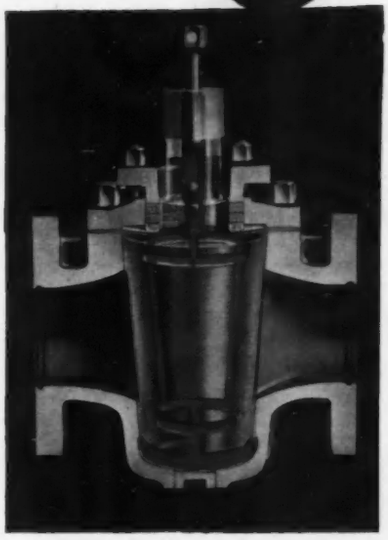

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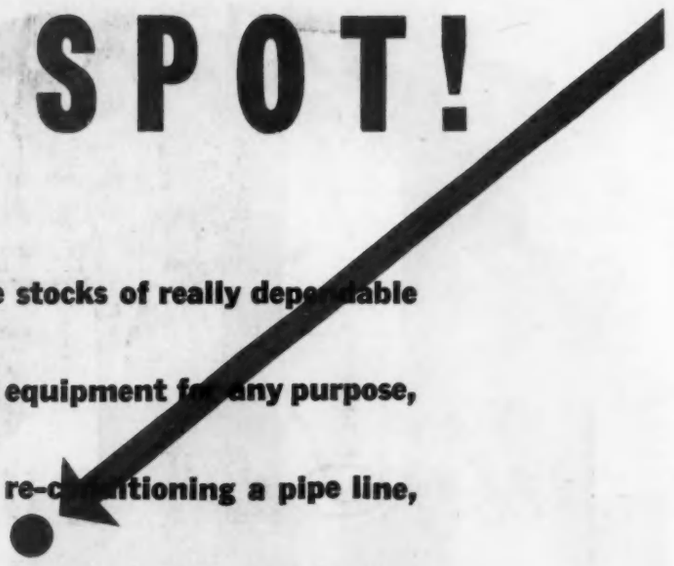
ON THE SPOT!



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THE OIL WEEKLY

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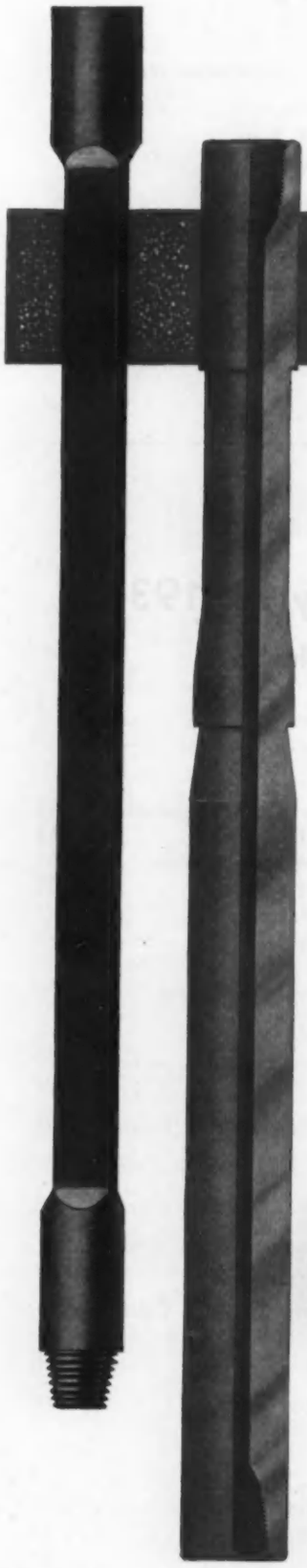

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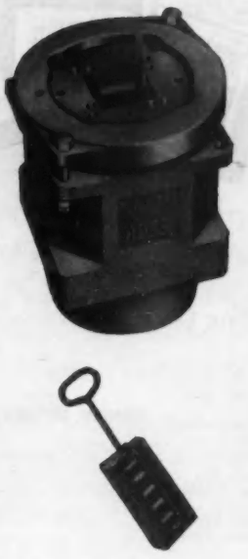

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THE OIL WEEKLY

FOR OIL AND GAS PRODUCTION AND PIPE LINE DIVISIONS

ENGINEERING • NEWS • STATISTICS

The Changing Panorama

DIRECTORS of the American Petroleum Institute have gone on record as believing that the users of petroleum products are best served when competition is free, when the operation of economic law is unhampered and when the profit incentive stimulates initiative and inspires invention. They further stated that the free operation of these forces inevitably tends to insure quantity, improve quality and to reduce prices.

In view of these beliefs they submitted a program of principles for the oil industry to Congress. Five principles suggested were: 1. A minimum of government regulation; 2. State governments be encouraged to regulate production and to promote conservation; 3. That the federal government permanently and rigidly enforce the Connally shipment law, approve interstate compacts, allocate production to state, and exercise control over imports; 4. That marketing pacts and agreements be permitted; 5. That any economic straightjacket governmental control would demoralize the industry. Page 80.

SHORTLY afterwards directors of the Independent Petroleum Asociation of America also adopted resolutions expressing their beliefs and desires and sent it to Congress as a petition. The I. P. A. A. petition in some respects agreed with that of the A. P. I., but it also differed strongly on other. Particularly noteworthy among the differences were the stands on the Thomas control bill. The I. P. A. A. favoring its passage. Page 11.

THE Natural Gas Division of the American Gas Association in meeting the past week at Memphis made known its viewpoints on the subject of governmental control. Members decried the increasing governmental interference and regulation of business and unanimously condemned the Wheeler-Rayburn holding company bill. Page 12.

Truck Shipping

THE Texas House has approved the truck shipping bill designed to eliminate the transportation of untendered petroleum products by trucks. The approved bill provides for fines from $50 to $200 for violation, which brings the offense within the jurisdiction of all justice of the peace courts. Furthermore, the state attorney general may confiscate the "unlawful" oil for the benefit of the state by filing a separate civil action. It is believed this will be an important weapon in fighting hot oil movement. Page 11.

Tax Issue Looms

OPPOSITION to continuance of federal excise taxes on gasoline and automotive products is beginning to be reflected in developments at the national capital. These developments should inspire opponents of the taxes to increase and intensify their efforts. They indicate strong possibility that the campaign against the unjust levies will be successful.

Taxes

MANY oil companies executives in their annual reports are calling the attention of their stockholders to the increasingly excessive burden of taxation on the petroleum industry. This is a wise and perfectly natural move because of the ever growing part taxation is playing in the income of oil companies. For example, one large concern and its related companies paid more than $55,000,000 in federal, state, municipal and county taxes, which exceeds by about $7,000,000 the total of all salaries and wages paid by the company. Based on the average retail price of gasoline throughout the country during 1934, the average tax on gasoline, which is but one of many taxes, was tantamount to a sales tax of 38 percent.

Pipe Line Reconditioning . . .

SO that Interstate Commerce Commission engineers may obtain data on condition of equipment for use in a valuation survey now being made, all pipe line companies must report such reconditioning work as they may be preparing to undertake. Special instruction sheets have been issued by the commission. See page 78.

»

A survey of major companies and several larger independents reveals that pipe line reconditioning work is more active today than at any previous time. Because of this, THE OIL WEEKLY this week presents a section devoted especially to pipe line reconditioning. This section, which commences on page 19, might well be termed a symposium of modern reconditioning methods; as it includes descriptions of the methods being used on the more important present projects and the outstanding progress made in the retarding of corrosion during recent years.

»

Magnolia Pipe Line Company has the largest reconditioning project. The methods being employed in completing this work is described on page 21 by Charles R. Stewart, Mitchell Stewart Corporation, contractors for the job.

»

A very interesting installation unit for cathodic protection of pipe lines is described for the first time in an article starting on page 25. The Texas Pipe Line Company has installed a wind-driven, direct-current generator west of Port Arthur for the control of electrolysis, and has made some very enlightening studies of its results.

»

When Lone Star Gas Company planned construction of a gas line to a new field, it was decided to reclaim 79 miles of old pipe line, the weighted average age of which was 13 years. Close records show that 81 percent of the pipe was in good and usable condition after being cleaned; 14 percent was made usable by spot welding and patching; and five percent had to be junked. Julian L. Foster, chief engineer of the company, describes the methods used in reconditioning this pipe on page 31.

»

By concentrating attention on "hot spot" areas many companies have been able to reduce corrosion losses on their lines. One company found on a 500-mile line, for instance, that rapid deterioration was confined to less than five percent of the total line length. The net result of this determination was the concentration of preventive effort along sections of the line giving most trouble as explained in an article on page 35.

»

United Gas System laid a new line in South Texas and then reconditioned the pipe salvaged from the line replaced. Pipe reconditioning was found economical by the company. The practices used in reclaiming the old corroded line are explained on page 41.

»

Standard Oil Company of California built a central pipe reconditioning plant when it decided to salvage an old line and use the pipe in laying a new oil outlet. The company removed the old protective coating by heating, cut the old screw threads by torches, and completely reconditioned the pipe, including application of a new protective coating for the "hot spot" districts. See page 45.

»

When Industrial Fuel Supply Company found one of its lines being troubled with internal corrosion, engineers looked around for a method to remove the water condensate from the gas. An article on page 48 describes how a dehydration was designed and installed so as to use equipment already in service.

The Oil Man's Calendar

MAY

14-16 *American Petroleum Institute, Mid-Year Meeting, Mayo Hotel, Tulsa.*

20-21 *National Oil Scouts Association, Corpus Christi, Texas.*

20-23 *National Association of Purchasing Agents—Oil Buyers' Group Session, Waldorf Astoria Hotel, New York.*

JUNE

5-6 *Eastern District, A.P.I. Division of Production, Pittsburgh, Pennsylvania.*

20-21 *Pennsylvania Grade Crude Oil Association, State College, Pennsylvania.*

SEPTEMBER

25-27 *National Petroleum Association, Atlantic City, New Jersey.*

NOVEMBER

4-5 *Independent Petroleum Association of America, Annual Meeting, Dallas, Texas.*

11-14 *American Petroleum Institute, Annual Meeting, Biltmore Hotel, Los Angeles.*

The Growing Demand for Oils

New uses are helping to increase consumption, although rising demand is based primarily on further expansion of older markets.

JACK LOGAN
Associate Editor

THE oil industry often has been criticized as being listless in developing markets and uses for petroleum products. It is charged that the industry largely waits for markets to open up for it. Especially is this charge heard in connection with controversy over proration and other measures aimed at restricting production of petroleum. The thought advanced is that the industry should devote more effort to increasing the use of oils, and less to curtailing production.

There is probably some foundation for the criticism that the industry might be more alert in developing new and increased use of petroleum derivitives. But in extenuation, it may be claimed by the industry that it has to some extent promoted new and greater uses of oils. It also may be pointed out that the industry has been kept vigorously active in constantly improving its established products and in meeting the naturally rising demand for those.

The significant point with which this discussion is concerned is the fact that demand for oils has continued to increase, even if the petroleum industry has not been especially active in developing wider markets. Under these circumstances, any new or increased uses that the industry can promote or encourage will make even brighter a demand picture that already is especially favorable.

New Uses for Oil

VARIOUS entirely new uses for petroleum products lately have been developed. A refrigerator company, for instance, is now tapping a broad market, which has potentialities for substantially expanding petroleum consumption. The company is now commercially marketing a kerosene-operated refrigerator, which is said to consume about one quart of kerosene daily. Obviously, there is involved a large potential market for kerosene, especially in the rural sections.

Of interest to the natural gas division of the petroleum industry is the similar gas-fired refrigerator. It is coming into greater use, even in heavily wired areas, the natural and artificial gas industries and utilities helping the refrigerator manufacturer to push the product. There also has been developed a low-cost, simple gas air conditioner, for use in homes and plants. Competing with electric air conditioning, it offers the selling point that it permits dehumidifying of air without necessarily affecting the summer temperatures, leaving chilling optional with the user.

Another potential new use for petroleum is in the making of rubber. The Du Pont laboratories were recently reported to have developed a formula for such manufacture. The formula provides for making from oil or coal the same artificial rubber now made from the gas acetylene. Such rubber has already proved equal to natural rubber in making automobile tires. Acetylene can be produced from petroleum as well as from coal, it is explained, although the process has not been fully developed on a commercial scale.

The new, speedy, Diesel engine driven trains that have been developed for use by the railroads also offer possibilities for greater oil consumption. (In France there are now over 75 auto rail trains run by gasoline motors). There is in progress, meanwhile, a perceptible swing to oil as fuel for ordinary railway locomotives.

Older Uses Increasing

AIR planes have been using considerable petroleum products for several years. But such use is increasing. Air transport companies in the opening two months of 1935 showed these comparisons with the similar 1934 period: a slight increase in plane miles flown, substantial increases in passengers carried, passenger miles flown, and express poundage carried. (A passenger mile is one passenger flown one mile). The

average distance traveled by each passenger has been steadily increasing.

There is in progress noteworthy mechanizing of farm work. That involves substitution of tractors, trucks, and other oil burning machinery for horses and mules. From Lubbock, Texas, for instance, came a report recently that within a period of several weeks over 1000 tractors had been sold to farmers in 20 counties of the surrounding plains country. The demand for the tractors, described as the heaviest in the history of the area, was attributed to scarcity of feedstuff and efforts to cheapen crop-raising costs. In other agricultural areas, similar large demand for tractors has developed.

Increased industrial activity has expanded the demand for lubricants and fuel oils, while kerosene and other products have also been more in demand. Oil burners came into greater use in 1934, and fuel oil consumption increased about five percent.

Motorists Using More Oils

WHILE the above new and minor uses have contributed materially to the large and growing demand for petroleum products, the chief factor in the rising demand for petroleum has been, nevertheless, further expansion of an older use: automobile, truck, and bus fueling. Production and sales of automobiles and trucks have been this year near the all-time peak levels of 1929. With respect to motor trucks, there is considerable expectation that both production and sales in 1935 will equal, if not exceed, the peak records of 1929. Not only is motor vehicle registration increasing, the consumption per car also is increasing.

The effect that the oil industry has felt from wide operation of automobiles, buses, and trucks is reflected in figures on consumption of gasoline. The domestic gasoline consumption in 1934 set an all time peak, having been 7.7 percent above 1933. In the opening two months of this year, moreover, the domestic gasoline demand was running slightly ahead of the corresponding period of 1934, indicating that a new, higher record will be established this year.

A major company in its annual report recently pointed out that at the lowest ebb of the depression, consumption of oil and its products was less than 15 percent below the 1929 peak. In 1934 the total demand was back within six percent of the top record. In 1935 there has been still further improvement in the demand situation. The total demand in the opening two months of the year was 1.2 percent higher than in the similar period last year.

Supply in Balance with Demand

THE present favorable situation with regard to demand is made all the brighter by the favorable relation of that demand to the supply. With noteworthy effectiveness, the supply of petroleum from domestic and foreign fields is being held in close balance with the demand.

This balance, in turn, is bringing strong markets and favorable prices for both crude and products. Benefiting by the attractive prices, oil companies are making favorable earnings records.

The industry is selling large volumes of oil, getting good prices, and showing profits.

Control Measures Effective

THE balancing of supply with demand has been effective, in fact, for several years. It has been so effective that production and imports have been held consistently below demand. In meeting requirements, substantial reduction of stocks has occurred. The stocks of all oils are the lowest for about eight years. Restriction of imports has occurred voluntarily and through federal government regulation. Restriction of domestic production has occurred with the aid of state and federal governments. The control promises, moreover, to be as effective henceforth as in the past, if not more so. For the East Texas field has offered the principal control difficulties in the past, and already over four years old, it is becoming a less serious menace. Meanwhile, no new "market threat" fields are in sight. Further strengthening the control situation is the increased effectiveness of conservation laws and programs. Contributing especially to better control is the Connally Act, under which the federal government since about March 1 has been barring from interstate commerce, oil produced in violation of state regulation.

Markets Exhibit Strength

SINCE that federal law became effective, great improvement in the markets has occurred. Wholesale prices of petroleum products entered upon an upward movement that has not yet been arrested. Retail prices have also advanced substantially. Each week, bringing higher product prices, has afforded additional hope of producers that crude prices will also improve.

Favorable Earnings Expected

IT is anticipated that financial results for 1935 will be generally the best for five years—since 1930. In 1934 the results were generally good, but in 1935 they will quite likely be better. Various oil company heads have made such predictions to stockholders. The earnings in the 1935 first quarter were comparable with those in the 1934 first quarter. But 1935 second-quarter prospects are especially bright, in view of the steady improvement of wholesale and retail prices since the beginning of March.

Even in 1934 profits were the predominant rule in the oil industry, the relatively few companies that showed losses having been chiefly those specializing in refining and marketing. The integrated companies and producers had fair profits. In 1935 there will apparently be an even smaller percentage of companies reporting losses. For the refiners and marketers, too, are now in position to show profit.

Truck Tender *Shipping Bill Approved by* Texas Legislature

Austin, Texas.—Both departments of the Texas Legislature last week approved House Bill 581, designed to prevent the movement of untendered oil by truck. The House voted the bill by 109 to 4, while the Senate voted 21 to 8. Since the bill got two thirds vote in both House and Senate it will become law as soon as Governor James V. Allred signs it. The Senate vote was to accept the conference report on the bill without change from the regulations approved by the House earlier in the week.

The passage of the bill is expected to materially influence the volume of hot oil being moved from the East Texas field, as it is alleged that greatest portion of untendered petroleum products have been finding their way to markets via trucks. If as effective as expected hot oil may drop to its lowest level since it first gained headway.

The measure finally passed by the House differed widely from the original bill, which applied to trucks alone.

As redrafted, the bill applies to untendered crude oil or the products thereof, and to "natural gas, bradenhead gas, casinghead gas, and gas produced from an oil or gas well."

The bill defines as "unlawful," oil produced in excess of commission allowables and transported in violation of commission orders.

Truckers must obtain manifests identifying the tender under which the crude was run, and the bill has been broadened to include shipments by rail requiring "shipping papers" carrying the same information as the truck "manifest."

Neither shipper, transporter, nor receiver shall handle oil under shipping papers other than that described in the papers accompanying the particular consignment.

The original shipper and receiver are so united through the transporter's shipping papers that each barrel of oil or products can be readily traced. Either shipper or receiver may be penalized for causing the transportation of untendered oil or products, or for receiving either of them.

The transporter, shipper or receiver may be subjected to fines ranging from $50 to $200 for violation of the statute. This brings the offense within the jurisdiction of the justice of the peace courts and would eliminate the necessity for filing costly civil suits, since the offense is a misdemeanor falling under the provisions of the criminal code.

The bill also provides the same fine or a similar fine for transporting, shipping or receiving untendered oil or products by "pipe line, railroad, boat, or barge."

Commission orders promulgated to enforce the act would be published three days in three newspapers of general circulation, the order becoming effective on the seventh day after the last day of publication.

Commission agents, state rangers, or any other peace officer would be empowered to stop shipments and investigate papers under the provisions of the bill. They would then be allowed to file charges whenever violations were disclosed.

When an application for a tender is rejected by the commission or its agents, the commission would be required to furnish the applicant with a copy of the rejected tender, together with the reasons for the rejection. Appeals from these orders of the commission could be brought in Travis County district courts. The court may not act on the application within less than five days, but an appeal to the civil appeals court may be taken if no action has occurred at the end of 20 days.

Confiscation

The bill prepared by Attorney General McCraw to provide for the confiscation of "unlawful" oil has been incorporated into the truck bill.

The act declares such oil a nuisance and provides for its confiscation to the use and benefit of the state. This action, however, requires a separate civil action brought by the attorney general.

Should the attorney general have reason to believe that "unlawful" oil is to be removed, he may obtain from the District Court of Travis County an order restraining the movement of the oil or products pending trial of the case to determine the exact source of the crude.

I. P. A. A. Favors *Passage of The Thomas* Oil Control Bill

Oklahoma City.—Discussions of limitation of imports of crude petroleum and its products to a fixed percentage of the total federal production allocation, federal allocation of quotas in commerce and production quotas, limitation of withdrawals from storage, etc., occupied the time of the board of directors of the Independent Petroleum Association of America in their semi-annual meeting held here Monday, May 6.

Russell Brown, general counsel for the association, was down from Washington to discuss the national situation and to point out the probable future problems of the independent operator. In the absence of President Wirt Franklin, who is ill at his home in Ardmore, Harold B. Fell, executive vice president, was the directing head of the meeting.

The board went on record as favoring passage of the amended Thomas oil control bill and advised that renewed efforts be made toward its passage.

Resolutions were as follows:

"BE I RESOLVED that the Independent Petroleum Association of America at a meeting of the directors held at the Biltmore Hotel, Oklahoma City, Oklahoma, on May 6, 1935, go on record as supporting such federal legislation as is necessary to provide for the conservation of our natural petroleum resources and the stabilization of the petroleum industry, and asserts that such legislation, to accomplish these purposes permanently and effectively, must include the following principles which were adopted at the Annual Meeting of the Independent Petroleum Association of America held at Fort Worth on December 7; which provisions heretofore approved having been included in Senate Bill S-2027 as introduced in the first session of the 74th Congress by Senator Elmer Thomas of Oklahoma.

"a. The limitation of imports of crude petroleum and its products to a fixed percentage of the total federal production allocation in the United States, this fixed percentage to be based on the ratio that the total average daily imports for the last half of 1932 bears to the average daily production allocation (which shall include storage withdrawals) for the United States for the past twelve months as fixed by the federal agency with the understanding that the total imports in any three months period shall not exceed this percentage. Included and classed as imports shall be all imports including imports for supplies for vessels at American ports and the only imports that shall not be included in this restriction are imports in bond exclusively for re-export or imports in bond for manufacture, the products of which are all exported. In this case of imports of any product of crude petroleum excepting fuel oil, gas oil, paraffin, and asphalt, one barrel of any product imported shall be deemed the equivalent of three barrels.

"b. The federal allocation of quotas for movement in commerce and production quotas to each oil producing state with the understanding that so long as the state regulatory body in any state keeps the production in that state within the federal allocation, that the state regulatory body shall have exclusive control within the state, but that at any time that the production in a state exceeds the

federal allocation that the federal agency shall then have the authority to control and regulate shipments in commerce and production within the state.

"c. Limitation of withdrawals from storage to such an extent as will prevent withdrawals from storage from unreasonably interfering with current domestic production by supplying an undue proportion of the domestic consumptive and export demand for petroleum and its products.

"d. Provision for planned orderly development of new pools by agreement of a majority of operators in ownership and numbers in the area.

"e. The providing of adequate penalties for the violation of any provisions of legislation.

"f. The creation of a federal agency of either five or seven to administer the law—this agency to be composed of the Secretary of the Interior as chairman and four or six members to be appointed by the President from nominations by the industry and to be experienced in the oil industry and otherwise properly qualified; these members to be selected from various sections of the country so as to give proper and adequate recognition to all oil producing regions in the country.

"BE IT FURTHER RESOLVED that this association favors the inclusion in any federal legislation that may be enacted a provision for the authorization by Congress of an interstate compact between oil producing states for the proper control of production within those states and further providing that when any two or more oil producing states enter into such a compact they shall be excluded from the provisions of such federad legislation so long as said compact states keep their total production within the combined federal allocation to those states; and

"BE IT FURTHER RESOLVED that this association favors the inclusion in any interstate compact that may be made between oil producing states of adequate provisions for planned orderly development of new pools within the compact states; and

"BE IT FURTHER RESOLVED that the Executive Committee of the Independent Petroleum Association of America is hereby authorized to represent the association in agreeing upon such details with respect to such legislation as they may feel is necessary to accomplish the purposes of this resolution, which purposes are to provide for federal legislation that will limit the supply of crude petroleum to the consumptive demand, there being included in supply the elements of domestic production, imports, and withdrawals from storage, and in demand the elements of domestic demand and exports; and

"BE IT FURTHER RESOLVED that this association believes that if the supply of crude petroleum is balanced to consumptive demand effectively that this will eliminate most of the evils in the industry; and

"BE IT FURTHER RESOLVED that we oppose the new proposals that have been made pertaining to the National Industrial Recovery Act, such as S-2445, but do favor an extension of the principles contained in the existing National Industrial Recovery Act; and

"BE IT FURTHER RESOLVED that the character of legislation herein recommended is all that is felt necessary and the Independent Petroleum Association of America is opposed to any legislation that would provide for federal control of the petroleum industry or the making of the petroleum industry a public utility; and

"BE IT FURTHER RESOLVED that copies of this resolution be forwarded to the President of the United States, the Vice President of the United States, the Secretary of the Interior, the Chairman of the Senate Committee on Mines and Mining, the Sub-Committee of that committee that held hearings on that bill, the Chairman of the House Interstate and Foreign Commerce Committee, the members of the Senate and House, and the press and oil trade publications."

Governmental Regulation *of Business Opposed by* Natural Gas Men

Memphis, Tenn., May 10.—Decrying increasing governmental interference and regulation, unanimously condemning the Wheeler-Rayburn holding company bill and urged to increase natural gas consumption through the development of air conditioning, modern advertising campaigns, research and vigorous sales campaigns, nearly 600 delegates to the meeting of the Natural Gas Division of the American Gas Association concluded a four-day session here Thursday.

With Dallas, Tulsa and New Orleans bidding, selection of the 1936 convention city was deferred until fall.

J. B. Tonkin, Pittsburgh, chairman of the Natural Gas Division, presided, with A. E. Higgins, Dallas, as secretary. J. J. Brennan, vice president of Memphis Power and Light Company, was in charge of convention arrangements.

Excerpts from keynote speeches:

George Ketchum, president of Ketchum, MacLeod & Grove, Inc., Pittsburgh: "Modern advertising offers perhaps the greatest opportunity of gaining larger volume of consumer sales." He urged vivid and dramatic advertising, increased advertising space and continuity of message.

A. E. Higgins: "Education along research, sale and dealer cooperative lines is vitally essential to the future of the gas industry. Gas officials must keep abreast of the times."

Dr. John Finch, director, U. S. Bureau of Mines, Washington:

"Cooperation of the Bureau of Mines, particularly along the lines of conservation of natural gas, is assured. Vast wasteage of natural gas, especially in Western fields, should cease."

George N. Parker, Mississippi River Fuel Corporation: "The natural gas industry has an opportunity to bring greater comfort and improved health conditions into the home and office through the medium of air conditioning. Nothing might be so beneficial to the gas industry as development of efficient gas air conditioning units, increasing the volume of sales through existing mains and distribution systems. All distributing systems have been designed to meet maximum demands which heretofore have always been reached during the winter season. If some use for gas can be developed that will use a larger portion of the available distribution or pipe line capacity during the summer months, a corresponding increase in income will result."

R. W. Gallagher, New York, in paper read by F. H. Lerchje, president Interstate Natural Gas Company, New York:

"Unless a sane understanding is reached between politicians and utility leaders, the life of the natural gas industry as a private industry will end. The public accepts new tax impositions upon utilities as a matter of course. Unthinking persons, regardless of the welfare of the industry, desire to be in control without carrying the responsibility of operation. Other industries, such as railroads, have suffered from the effects of excessive taxation and destructive regulations. The natural gas industry is facing grave difficulties if some of the proposed measures of the federal government are carried out."

Alexander Forward, managing director, American Gas Association, New York City: "Business will improve. The natural gas industry is definitely turning upward."

R. S. Young, president, American Gas Association: "I urge a balanced federal budget and a sound banking and currency situation so that we may have a sound economic and monetary structure."

Ralph E. Davis, president, Ralph E. Davis, Inc., New York: "America can expect depletion of her known natural gas reserves in about 40 years at the present rate of consumption. In some of the gas fields of Texas, particularly the Amarillo field, enormous volumes of gas have been deliberately blown into the air. In the Amarillo field alone there is considerably more than a billion feet a day being wasted."

H. A. Wallace, president, Charleston (W. Va.) Group, Columbia Gas & Electric Corporation:

"Conservation of natural gas reserves is necessary to safeguard the investment in plant and equipment, pipe lines, distributing systems."

The resolution condemning the utility holding company bill was introduced by Frank Chase, vice president Lone Star Gas Company, Dallas, and vice president American Gas Association. Copies of the resolution were sent to the Interstate Commerce Commission committes of the Senate and House.

Ickes Says Industry Regulation Has Helped

Washington, D. C.—Publication as a full-page newspaper advertisement of the American Petroleum Institute's petition to Congress on the Thomas oil bill served this week again to bring the measure into the limelight.

Asserting that the oil industry would not have had the money to pay for the advertisement if it had not also had regulation, Oil Administrator Harold L. Ickes told newspaper men "If I could afford it I would advertise in all the newspapers and quote what they said to me in the summer of 1933."

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MEN IN THE INDUSTRY'S NEWS

WALTER B. PYRON Made Vice President of Four Gulf Companies

WALTER B. PYRON

WALTER B. PYRON, who for several years was vice president and general manager of Western Gulf Oil Company, has been named vice president of leading Gulf subsidiaries operating in the Southwest. He will have headquarters in Houston, and started on his new duties May 10. His election to the new post and transfer from Los Angeles followed the recent death of Underwood Nazro. As vice president of Gulf Production Company, producing subsidiary in Texas; Gulf Pipe Line Company; Gulf Refining Company of Louisiana, producing subsidiary in that state, and Mexican Gulf Oil Company, Mr. Pyron becomes active head of one of the largest producing units in the Southwest, and returns to Houston to resume duties in a familiar district. Pyron's first connection was in a clerical capacity in 1907 with J. M. Guffey Petroleum Company at Beaumont, the forerunner of Gulf Production Company. He was made head of operations in North Louisiana, first as general agent and later as vice president, and served in these capacities until 1918. He was transferred to Fort Worth in 1918 and placed in charge of North Texas operations. He remained in that capacity until 1924, when he was transferred to Houston as assistant to Underwood Nazro. He was sent to California to head Gulf operations on the Pacific Coast and was instrumental in building up a substantial production of heavy oil in the Fruitvale field, an area discovered by the company. Pyron retained his Texas citizenship during his absence from the state, and returned to Texas once or twice a year to perform military duty. He has been active in National Guard activities since the World War, and is now a lieutenant colonel in the Texas Cavalry Brigade.

FLOYD L. GEHR, district superintendent of production for Stanolind Oil & Gas Company in the Texas Panhandle, has been transferred from Pampa to Midland to become superintendent of the West Texas-New Mexico division, relieving R. G. Bechtel, who was recently transferred to Houston to take charge of production in the newly created Louisiana-Texas Gulf Coast division. Gehr was succeeded at Pampa by D. C. Harman, former division engineer.

JOH C. STEKETEE, assistant superintendent for Astra-Romana at Campina, Roumania, is spending the month of May in California, visiting the oil fields. He spent two months in the Mid-Continent, one month in Mexico and will sail from New York in June to resume his duties.

ERNEST A. HANSON, deputy supervisor of the Mid-Continent District, Oil and Gas Leasing Division of the United States Geological Survey, has been transferred from the Tulsa office, where he had served since February, 1932, to Roswell, New Mexico.

R. J. DAUGHERTY, director of public relations for The Empire Companies, has been elected mayor of Bartlesville, succeeding H. G. Ellis, western manager of Wiser Oil Company. Daugherty held this same office two years ago.

FRANK O. PRIOR, president of Stanolind Oil & Gas Company, Tulsa, has been on a business trip to Houston.

B. H. VAN DER LINDEN, production manager, Royal Dutch Group, The Hague, Holland, is touring the United States, and has been a recent visitor in Shell Petroleum Corporation's Houston division office.

T. E. KEEFER, field superintendent for Stanolind Oil & Gas Company in the Elk Basin district, Wyoming, has been transferred to Hobbs, New Mexico, relieving J. P. Gibbins, who resigned to organize a labor service to be available to companies is need of experienced workmen for short periods.

ELMER R. AMES (Bob Ames) has been appointed district superintendent for the Southern Counties Gas Company, with headquarters at Pomona, California. He succeeds Frank Wright who has been promoted to a similar position at Santa Monica.

W. R. LONGMIRE, for the past two and one half years district geologist for Gypsy Oil Company in Kansas, has been transferred to headquarters offices in Tulsa. He is succeeded by Anthony Folger, who has served the company in Kansas for the past 10 years.

WILLARD MILLER, vice president in charge of the land and geological departments of Ramsey Petroleum Corporation, was a Tulsa business visitor during the week. Headquarters of the corporation are in Oklahoma City.

J. HENRY LANGSPECHT, chief scout in the Mid-Continent division of Shell Petroleum Corporation, is confined to his home with an attack of influenza.

MERVYN AP RHYS PRYCE, petroleum technologist, Trinidad Leaseholds, Ltd., and one of the owners of Petroleum Options, Ltd., Trinidad, B. W. I., has been in Houston recently.

W. G. TSCHUDIN, general manager of Mexican Sinclair Petroleum Company, Tampico, Tamps, Mexico, has been a recent visitor in Houston.

JOE DEUPREE, independent operator of Houston, has moved to San Antonio, Texas. He is drilling a well in Medina County.

N. L. LLOYD is the representative in South Texas for Joseph H. Parker, independent operator of Houston. Mr. Lloyd recently moved to San Antonio. He is drilling a well in Bexar County.

(*Continued on page 16*)

LINE PIPE

ALL SIZES AND AMPLE QUANTITIES FOR EVERY PURPOSE

New Line Pipe

2, 3 and 4-inch National Tube Line Pipe carried in our yards at convenient points for immediate delivery in carloads and less.

Prompt delivery to any territory from Memphis and Mill stocks on carloads of any size or quantity.

Used Line Pipe

Our yards in Texas, Oklahoma and Kansas are always well stocked with large quantities of all sizes from 2-inch to 6-inch. Prompt delivery on small or large quantities. All carefully graded.

We guarantee quality as represented by us.

of USED CASING and LINE PIPE always carried in our yards for immediate delivery

We are continually engaged in salvaging properties, in buying and selling over an extensive territory. Many times we can make deliveries from original locations at considerable saving of handling costs. We can usually supply what is wanted, immediately, from a convenient point.

A FEW EXAMPLES OF SPECIAL LINE PIPE VALUES NOW IN STOCK:

2-inch Plain End: Approx. 12,000-feet. Practically new 4#, 2000# test. 40-foot lengths, center welded and beveled. Attractive price, f. o. b. Tulsa.

2-inch Screw End: Approx. 55,000-feet. Never been buried. Straight joints—good collars and threads—clean inside and out. Special price f. o. b. location near Caddo, Texas.

2½-inch Good Quality: 17,000-ft. at Pampa, 10,000-ft. at Houston.

4-inch Plain End: Approx. 55,000-feet, 6#, 4-inch Boiler Tubes, cleaned and beveled for welding. 40-foot lengths. All or any part at guaranteed attractive price f. o. b. Tulsa.

5$\frac{1}{16}$-inch: Several thousand feet, both plain end and screw end, 13# and 17#, ready for delivery from Tulsa yards.

These are only representative items. Included in our stocks is 2, 3, 4, 5$\frac{1}{16}$ and 6-inch of various grades.

All items listed offered subject to prior sale.

For quotations or delivery information, phone—station to station—or wire, our nearest store or sales office.

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GENERAL OFFICE AND WORKS: WICHITA, KANSAS

BLUE and MORTON to Head Indian Territory Illuminating Oil Company

—Blank-Stoller

BURDETTE BLUE
Is Elected I. T. I. O. President

R. L. MORTON, JR.
Now Is I. T. I. O.
Vice President

—Blank-Stoller

BURDETTE BLUE, for the past eight years vice president and general manager of Indian Territory Illuminating Oil Company, was elected president of that organization at a meeting of the board of directors held in Bartlesville on Wednesday afternoon, May 8. Coincident with this announcement came announcement of the resignation of H. V. Foster, who has served as president of the company continuously since August 20, 1903. Further announcement was made of the resignation of R. L. Morton, Jr., as treasurer of Empire Companies and his election to vice presidency of Indian Territory Illuminating Oil Company to fill the vacancy created in the executive staff as the result of Mr. Foster's resignation. Notwithstanding his resignation, Mr. Foster, through Foster Petroleum Corporation, continues his interest in the company as a stockholder as heretofore and the two companies will engage in joint leasing and development ventures. Foster Petroleum Corporation will reopen offices in Bartlesville. Receiving his LLB degree from the University of Kansas in 1905, Mr. Blue moved to Bartlesville from Kansas City in August of the following year to begin the practice of law. Although his age prevented his immediate admission to the state bar, he soon established his office and shortly thereafter was named city attorney, a position he held for several years. In 1917 he joined the staff of Indian Territory Illuminating Oil Company as counsel. During the 18 years which have passed he has earned an enviable reputation as an executive. The history of Mr. Foster's connection with the oil industry predates most of the history of Mid-Continent oil development. He was born at Westerly, Rhode Island, on September 6, 1875 and received an engineering certificate from the University College, London, England, in 1894. His engineering training was completed with a three-year course at Columbia University, New York and his work as an engineer began in Wisconsin where he was in charge of several drainage projects. In 1899 he became treasurer of the Phoenix Oil Company, later becoming treasurer of the Osage Oil Company, organized to take over holdings of the Phoenix. The two were consolidated in 1902 to form Indian Territory Illuminating Oil Company of which he became president the following year. Subsequently acquired properties were consolidated in 1924 under the name of Foster Petroleum Corporation.

H. V. FOSTER
Retiring I. T. I. O. President

G. W. BASOM, of Abilene, has moved to San Antonio. He has formed the Texas Inland Oil & Gas Company with offices in the Alamo National Building. The company has completed one well and is drilling a second in the Jacob field, McMullen County.

HARRY W. CLIFFORD, formerly advertising manager for the Skelgas division of Skelly Oil Company, has been made general advertising manager of the company with headquarters in Kansas City.

LEO S. FOX, aged 35 years, acting chief geologist for General Petroleum Corporation during the absence of C. M. Wagner in New York, was killed almost instantly May 4. He was riding in his car alone in Frazier Mountain Park when his car hit a hole in the road and rolled over four times. He was leaving a barbecue picnic attended by a number of petroleum engineers and geologists. He had been with General Petroleum Corporation in California since 1924 and is survived by his wife. Funeral services were held in Los Angeles May 8.

Expect Little Change In Revised Oil Code

Washington, D. C.—With the exception of one point, it does not appear that the oil code will be affected by the new legislation being considered in Congress. This one point deals with the future status of filling stations and producers selling locally only, which depends upon the interpretation to be given the Senate Finance Committee's prohibition in the new recovery measure against the imposition of codes upon intrastate industries.

A major question to be decided is whether NRA shall be continued for nine months, as proposed by the finance committee, or for two years, as urged by the President. It is expected that the House of Representatives will seek to have the two-year period accepted as an amendment to the senate measure, but there is no certainty that the senate will accept the change.

The one likely change developed Friday with the disclosure by Donald R. Richberg, chairman of the National Industrial Recovery Board, of his plans for the revision of codes, which is to be undertaken as soon as Congress passes the new legislation.

It has been the contention of NRA officials that codes should apply to any intra-state industry whose activities substantially or directly affect interstate commerce, a result of which would be to retain filling stations under the code. On the other hand, the senate measure provides that codes shall not apply to "any person whose business is wholly intrastate," which would relieve producers selling locally only and station operators buying and selling gasoline locally.

Allred Signs Two Gasoline Collection Bills

Austin, Texas.—Two important bills intended to aid in the collection of gasoline taxes in Texas were passed by the legislature last week.

H. B. 743 was signed by Governor James V. Allred. This requires that all inferior grades of gasoline be so labled as to be readily identified.

H. B. 749, sent to the governor for signature, is designed to aid the state comptroller in the actual collection of the tax.

Stripper Well Owners *in Annual Meeting Ask for* Code Revision

Oklahoma City.—Although its membership numbers several thousand the annual meeting of the National Stripper Well Association, held here on Tuesday, May 7, was attended by a relatively small number. Despite the small attendance a program of broad national interest to stripper well owners was presented, and an opportunity was afforded to become acquainted with national trends through the discussions led by Harold B. Fell, executive vice president of the association and Russell Brown, general counsel for the Independent Petroleum Association of America.

At conclusion of the meeting all officers of the past year were reelected. They are as follows: William Bell, Robinson, Illinois, president; Harold B. Fell, executive vice president, Tulsa; W. W. Warner, vice president, Nowata, Oklahoma; and T. B. Steele, secretary-treasurer, Robinson, Illinois.

Resolutions were adopted asking exemption of stripper well employees from the hours of labor and rates of pay provisions of the petroleum code, that a definition of stripper wells be made a part of the code and specifying hours of labor and rates of wages which would be considered equitable.

The following was presented in the form of a resolution in definition of stripper wells:

"Stripper wells are wells of such small production, and of such low gross revenue, that the regular labor provisions of the code as to maximum hours and minimum wages cannot be carried out in their operation and leave a reasonable margin for the operator.

"For the purpose of providing for as specific a definition as possible under the above general definition of stripper wells the following definition is adopted:

" 'The wells in any group of wells, upon a single lease or group of leases within a single pool, operated by the same pumper or pumpers and which do not return in aggregate gross income from the working interest, over a six month's period (said period to begin on April 1 and October 1 of each year), an amount in excess of 40c per day per 100 feet in aggregate depth of the wells in such group, are declared to be stripper wells. Any such group of wells, as above described, which do not return from the working interest and average gross income exceeding $4.00 per day per well during such six month's period, shall be considered as stripper wells regardless of the average depth of the wells. Provided that no well shall be included in any group for purposes of the above computation unless such well shall have produced oil for at least 120 days during such six month's period.'

"Provided, however, that any operator who fells that on account of peculiar conditions surrounding his particular wells that his wells are stripper wells within the meaning of general definition, even though they may not fall within specific definition as set out above, he may petition the State Production Committee or Regional Production Committee of his State or Region for a hearing, and should said committee, considering all of the circumstances, determine that his well or wells are wells of such small production, and of such low gross revenue, that the regular labor provisions of the code, as to maximum hours and minimum wages cannot be carried out in their operation and leave a reasonable margin for the operator, it shall certify to the Planning and Coordination Committee that said wells are stripper wells within the meaning of the code, and such certificate shall upon approval by the Planning and Coordination Committee become effective.

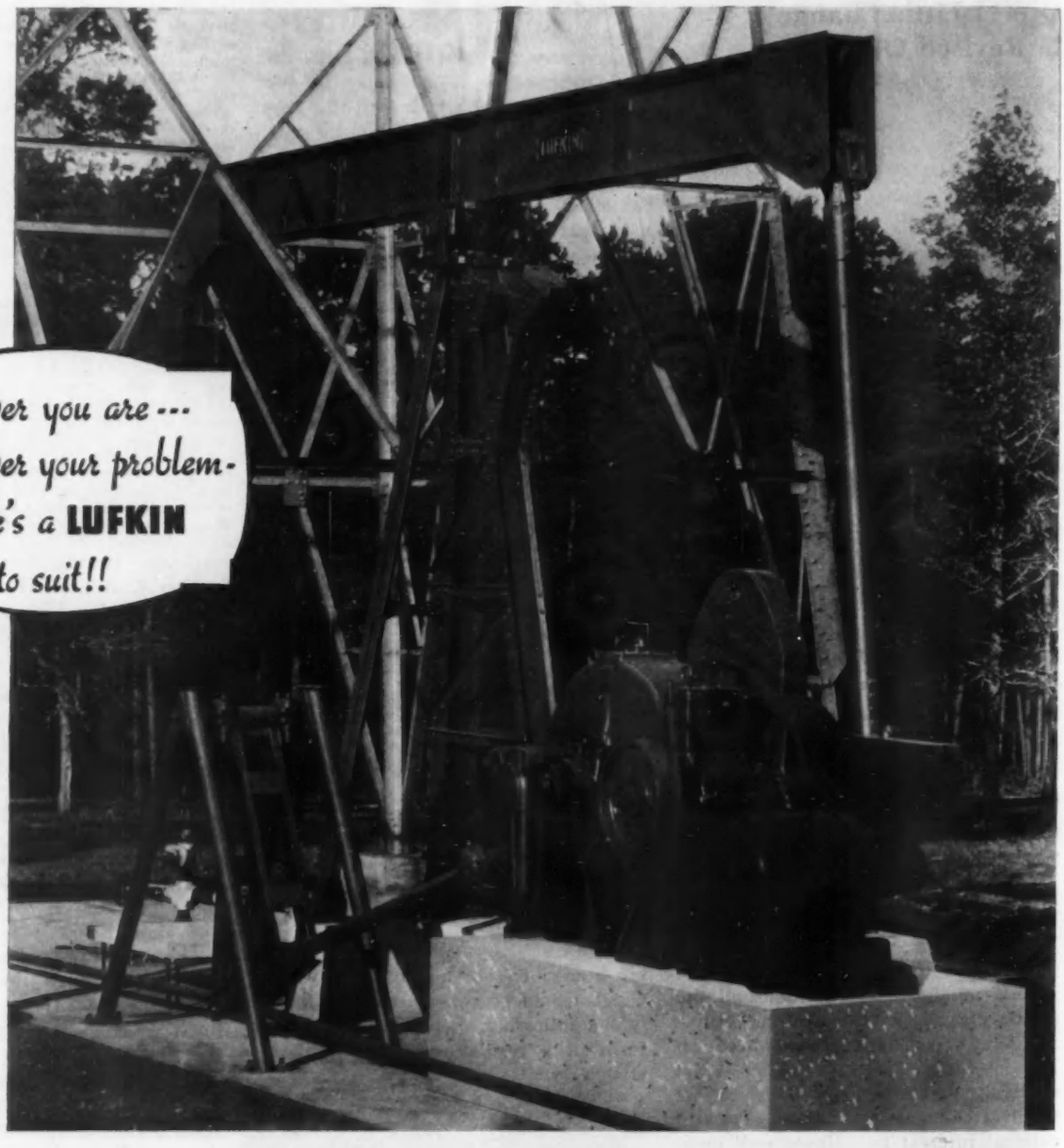
"Further providing that should employees on any well or group of wells feel that while the above definition might include such wells, that the peculiar conditions surrounding said property, should warrant its reclassification as non-stripper wells under the general definition, they also may appeal to the State Production Committee or Regional Committee for a hearing to determine whether or not said wells are stripper wells. Should said committee, considering all circumstances, find that such wells are not stripper wells, it shall certify such findings to the Planning and Coordination Committee, and such findings upon approval of the Planning and Coordination Committee, shall become effective."

It was further recommended that Section 4, Article II of the Code of Fair Competion for the Petroleum Industry be amended as follows:

"Permitting employees on drilling operations to work 56 hours per week and providing for fixed minimum wages for drilling operations on wells exceeding 2500 feet in depth, wells greater than 1000 feet and not exceeding 2500 feet and wells not exceeding 1000 feet in depth. Employees on drilling operations other than clerical employees and trucking employees would be allowed to work not more than eight hours in any one day nor more than 56 hours in any one calendar week through the completion of one well; provided that such employees might work more than eight hours in any one day but not more than 16 hours in any two days, if conditions were such as to make relief impracticable; further, that upon completion of one well, employees would immediately average back to 42 hours per week."

The following wage minima for employees engaged in drilling operations were recommended:

"Rotary tools at depths exceeding 2500 feet, drillers $1.25 per hour and helpers 75 cents per hour; rotary tools at depths greater than 1000 feet but not exceeding 2500 feet, drillers $1.0625 per hour and helpers .6375 per hour; rotary tools at depths not exceeding 1000 feet, drillers .9375 per hour and helpers .5625 per hour; cable tools at depths exceeding 2500 feet, driller $1.00 per hour and helpers .875 per hour; cable tools at depths greater than 1000 feet and less than 2500 feet, drillers .85 per hour and helpers .74375 per hour; and cable tools at depths less than 1000 feet, drillers .75 per hour and helpers .65625 per hour."



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SEE COMPLETE DETAILS ALSO IN THE COMPOSITE
CATALOGUE OF OIL FIELD EQUIPMENT

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LUFKIN

Pipe Line Reconditioning Section

MORE MILES OF PIPE LINE are being reconditioned and relaid today than ever before. In view of this fact and the increasing interest in such work, THE OIL WEEKLY devotes a section in this issue especially to pipe line reconditioning. On this page is a brief article summarizing the amount of reconditioning work now underway. Following pages contain articles describing operations on some of the more important projects and on corrosion, which is such a vital factor in the maintenance and reconditioning of pipe lines.

Pipe Line Reconditioning Work Is at High Level

IN a survey, which included the activities of all major companies and several larger independents, it was found that pipe line reconditioning work is more active today than at any previous time. This is a natural situation as many of the industry's existing carriers are more than 15 years old

In addition to actual reconditioning projects now under way, large sums are being spent for maintenance work, which really is a reconditioning operation but is not listed as such by pipe line companies. For example, one large company appropriates from $40,000 to $50,000 a year for maintenance, which involves repairing of short sections of lines through "hot" spots, railroad crossings, etc. This work is very common and goes on at all times and, consequently, was not included in the survey.

Looking upon the situation from an economic angle, there is every reason to believe that a large amount of this type of work should now be under way or appropriated for. Most pipe line companies realize that it is only a matter of time until the older lines must be reworked and that the longer such a campaign is postponed the greater the expenditures. Therefore, there should be an increasing amount of reconditioning work in years to come.

Another factor that will encourage the reconditioning and perhaps even the relaying of old lines is the results being obtained on present projects. From work already completed it has been found that reconditioning is an economical operation. Several companies, in taking up old lines, have found that from 90 to 95 percent of the pipe is usable again. One company, that kept close records, found that 81 percent of the pipe was usable with only cleaning and recoating, and that an additional 14 percent could be reclaimed and made suitable by modern reconditioning and repairing methods. This information has been of considerable interest to those executives who contemplate such work in the future.

Present operations also are developing ideas on the methods that should be employed when reconditioning lines. Practices today include the removal of the pipe from the ground, complete cleaning, and then thorough inspection. After inspecting, the pipe is culled and that part salvageable by patching and spot welding is reclaimed. It is then usually recoated and relaid in the same manner as new pipe.

The amount of reconditioning work today has reached a high level largely because of one project. It is Magnolia Pipe Line Company's reconditioning program, which ultimately may reach 1000 miles, but which at present consists of approximately 500 miles of line. Work is well under way on the reconditioning of Magnolia Pipe Line Company's eight-inch carrier

Crew wrapping Magnolia Pipe Line Company's reconditioned line with chemically treated muslin, after line has been coated.

THE ONE WRENCH to rely on

New "TRIMO-ALLOY"

THE MOST POWERFUL PIPE WRENCH EVER MADE

The only way to get the top limit of pipe wrench strength, safety and service is to standardize on this new *all-alloy steel* wrench, *drop forged* and *heat treated* throughout — and combining the tremendous toughness of molybdenum, manganese, nickel alloys.

Look for the red tag and look for the utmost in pipe wrench values

TRIMONT MFG. CO.
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Leading wrench-makers for the oil industry for half a century

from Luling to Beaumont, Texas, and from Beaumont to Corsicana, Texas. The former consists of 230 miles and the latter of 240 miles. This reconditioning program is one of the outstanding pipe line projects of the year. It is estimated that the company is spending from $1500 to $2000 per mile. An article describing the work being done on this project appears in this issue. The company is removing the pipe from the ditch, completely reconditioning it and placing it back in service without interrupting the use of the line.

Another reconditioning job of considerable size is that of Standard Oil Company of California, which is laying a new pipe line from material being reclaimed from another line. It consists of reconditioning 96 miles of 12-inch pipe. The pipe in addition to being completely removed from the ground is being cleaned of scale, rust and old coating. It is being cut so as to eliminate the old screw threads, and patched, after which it is being partly coated before laying.

Stanolind Pipe Line Company is reconditioning an eight-inch line from Ranger, Texas, to its Grayford Station, a distance of 45 miles. The line was laid in 1918 unprotected. The entire 45 miles is being dug up, inspected and reconditioned.

Sinclair Prairie Pipe Line Company is reconditioning 20 miles of eight-inch pipe and 20 miles of 12-inch pipe on a parallel line from its Panola station near Shawnee, Oklahoma, to the Canadian River. On this line only the "hot" spots are being reworked.

There is additional reconditioning work under way. Standard Pipe Line Company of Louisiana is reconditioning a line northwest from Shreveport into Arkansas. Two gas lines in the Rocky Mountain region are being reconditioned, and United Gas System is doing reconditioning work on its South Texas lines.

Corrosion Work

Since corrosion plays such a large part in the life of a pipe line, work engaged in by pipe line companies in the combating of corrosive action naturally comes close to the classification of reconditioning. In this work a trend of importance is the introduction of currents by the use of small generators and bonding of lines to take these currents off at desired points rather than permitting ordinary line currents to perforate coatings where outside influences may happen to attract them from the line. With few exceptions operators are coming to the belief that scientific studies of soil and electrolytic conditions are good investments.

In this issue there is described an installation of wind-driven generators for this purpose. The April 1 issue of THE OIL WEEKLY had an article "Soil Stress Is a Pipe Line Corrosion Factor in California," which describes some soil survey methods being used by California pipe line companies. In addition to their work on electrolysis, pipe line companies have found that it is economical to pay special attention to the maintenance or reconditioning of lines in "hot" spot areas as described elsewhere in this issue.

Tank Farm Reconditioning

A situation similar to that found in connection with pipe lines is encountered in a study of reconditioning of storage tanks. Some companies follow the practice of painting the entire tank, while a large number paint only the roof and some the roof and top ring. More thought is being given to conservation of petroleum vapors and one company now is installing 38 conservation units in a Texas area. Another concern recently has reroofed 12 tanks at Mexia, Texas, and now has under way the reroofing of five other tanks, which is mostly patch work. One concern has made arrangements whereby each tank that is empty is to be inspected and a representative sample of the bottom is to be removed for study.

THE largest reconditioning job underway is Magnolia Pipe Line Company's present project. Late in March the company commenced a major pipe line reconditioning program that may ultimately result in about 1000 miles of line undergoing a complete renovation. Approximately 230 miles of single eight-inch line from Luling to Beaumont, Texas, and 240 miles of eight-inch line from Beaumont to Corsicana, now is being reconditioned. The methods employed are described in the accompanying article.

Modern Reconditioning

Methods Permit Uninterrupted Use

Of Long Pipe Line

CHARLES R. STEWART
Mitchell Stewart Corporation

MAGNOLIA Pipe Line Company's reconditioning project is now well under way. Four gangs are working south between Corsicana and Richard, Texas, on the Corsicana-Beaumont main line, and two gangs on the Luling-Beaumont line.

A ditching gang uncovers the pipe, which is buried from 18 to 20 inches below the natural surface of the ground, with the exception of creek crossings and hilly country, where such covering varies from one foot to 20 feet or more in depth.

From careful observation and records kept, it is found that the deeper the pipe is buried the greater likelihood of corrosion; pipe that is very near the surface of the ground, even in swamps, showing far less corrosion.

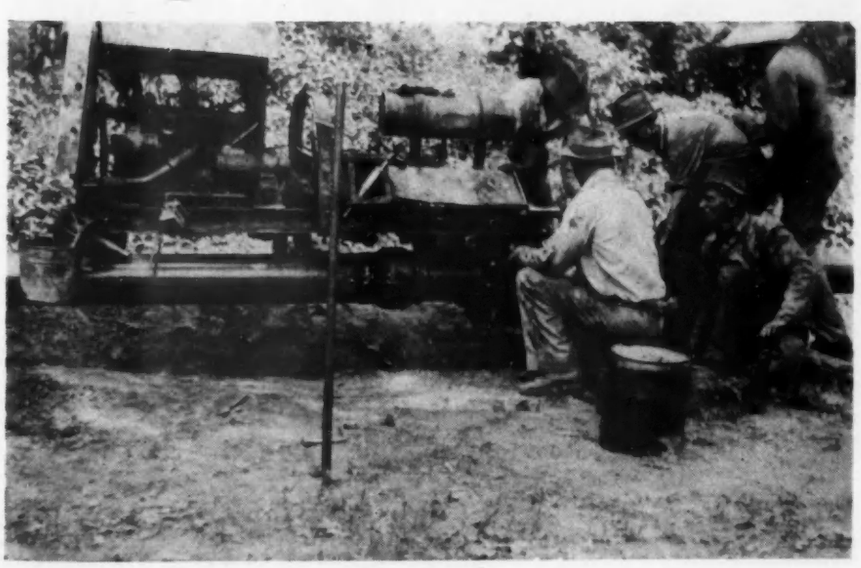
The ditching gang is followed by a raising gang which raises the pipe out of the ditch by chain hoists to a height of around 12 inches above the ground level, and blocks it up on wooden skids.

Throughout the work great care is required in the handling of the pipe, as pumping of oil through the lines continues as usual, with the exception of possibly very occasional stoppages for replacement of bad pipe, as referred to later herein.

Cleaning Methods

After the pipe has been raised and skidded up, it is cleaned by a cleaning machine which travels along the pipe under its own power. This machine is fitted with a revolving double cleaning head containing special scraper knives and toothed cutter wheels that produce a chipping action, followed by a series of steel wire brushes, the combination of which scrapes off the old paint and wrapping or other protective insulation, and rust, disclosing and baring the pitted places.

At intervals during the day the scraper knives, cutter wheels



Pipe machine crew getting brushes and cutters ready to hurdle an old "repair saddle."

and brushes are changed, new sets being substituted; a complete change consisting of approximately six knives, 380 cutters and eight brushes.

The machine also has to be taken off the pipe, and replaced further on, where obstacles are encountered such as repair saddles, gates and sharp bends.

Following the cleaning machine a pipe inspector examines the pipe. He carries with him a pit gauge for measuring depths of pits. He marks on the pipe where patches have to be put on, and the sizes of patches required, and also marks deep pits which have to be spot welded; i.e., the pits filled up with metal.

The welders follow closely behind, as also a hand cleaning gang which completes the cleaning out of any pits that the cleaning machine has not fully completed; and at times where the pipe is badly pitted this necessitates quite a large number of men.

The patches vary in size according to requirements, and consist of steel plates that are electrically welded to the pipe.

Above: The coating is applied by hand with special care being taken to rub the mixture into the pipe.

In some cases the pipe is practically beyond repair, i.e., effect and extent of corrosion has become so serious that it would be advisable to take out such part of the line and replace by new pipe.

These places are marked, the pipe at such locations is left on top of the ground, and when there are sufficient numbers of such places to warrant shutting down the pipe line pumps a certain day is selected and the bad stretches are cut out and replaced with new pipe. These replacements may vary in length from a joint to several hundred feet.

Recoating

When the pipe has been thoroughly cleaned and repaired the protective covering is applied, consisting of a rust preventive pipe compound which is rubbed on the pipe by hand, completely covering the whole surface of the pipe, and then thoroughly rubbed in, this last mentioned detail being very necessary as it is important that even the smallest pits are filled with the compound.

As this, naturally, is a slow process quite a large number of men are engaged upon this part of the work, each man being supplied with a large bucket of the compound.

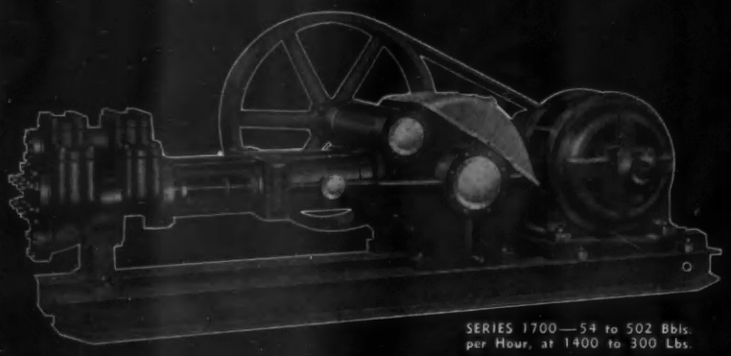
They are followed closely by men who wrap the pipe in spiral fashion with chemically treated muslin, which is carefully and very tightly wrapped. Additional men give the pipe a final coating of waterproof paint.

After the treating gang finishes its work the pipe is lowered into the ditch, every precaution being taken to avoid scratching or injuring the protective covering on the pipe. The ditch is then refilled and fences replaced.

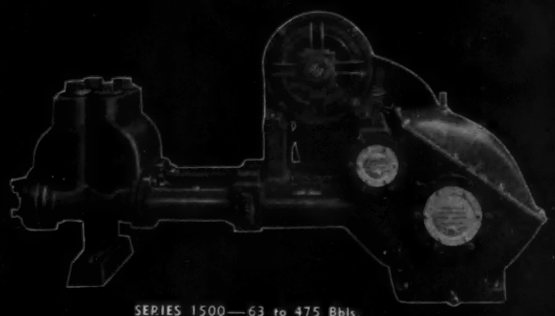
Mitchell Stewart Corporation, of Dallas, Texas, who have the contract for this work, have had many years of experience on oil and gas pipe line construction and reconditioning. They have been engaged extensively on pipe line construction from the Great lakes to the Gulf of Mexico for most of the major oil and gas companies of the United States, and have recently also constructed some 1600 miles of gasoline pipe lines through Pennsylvania, Ohio and New York States, also in Massachusetts, and Rhode Island for various companies. Their first work in Texas was for Magnolia Petroleum Company in 1911. Previous to that they had participated in considerable work for Standard Oil Company of New Jersey and its subsidiaries, and other companies, in Kansas, Oklahoma and Arkansas, and also in the Eastern States, the firm at that time being connected with MacPherson Construction Company.

Chemically treated muslin is applied as the second stage of the insulation process.

PUMPS DESIGNED STRICTLY FOR THE OIL INDUSTRY



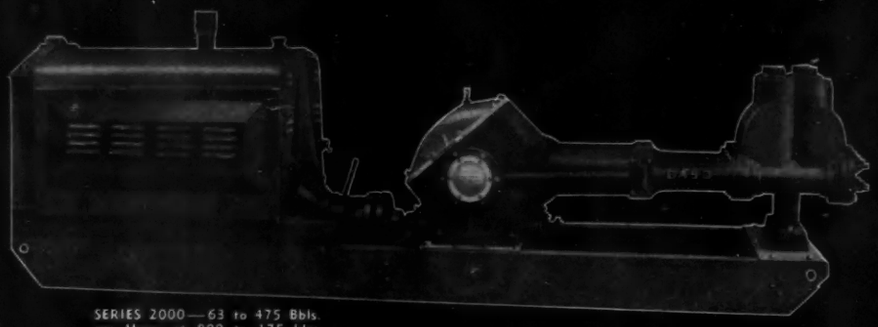
SERIES 1700—54 to 502 Bbls. per Hour, at 1400 to 300 Lbs.



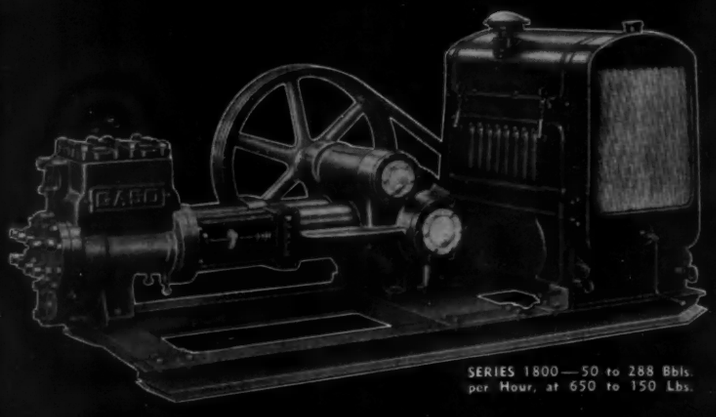
SERIES 1500—63 to 475 Bbls. per Hour, at 800 to 175 Lbs.

FIG. 601 —Walking Beam Pump, 30 to 55 Bbls. per Hour

FIG. 604 — For Gas or Vacuum, 26 to 28 Points Vacuum, 14" to 20" Cyl.



SERIES 2000—63 to 475 Bbls. per Hour, at 800 to 175 Lbs.



SERIES 1800—50 to 288 Bbls. per Hour, at 650 to 150 Lbs.

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FIG. 201 — Rodline Pump, 31 to 41 Bbls. per Hour

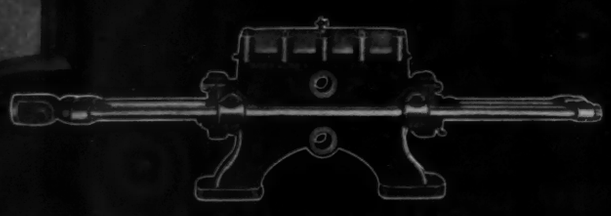

FIG. 301 — Jerker Pump, 32 to 157 Bbls. per Hour

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5. Furnished either bronze mounted or all iron with steel stem.

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2½"—3" . . . 125 pounds

OIL, WATER OR GAS NON-SHOCK WORKING PRESSURES

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2½"—3" . . . 175 pounds

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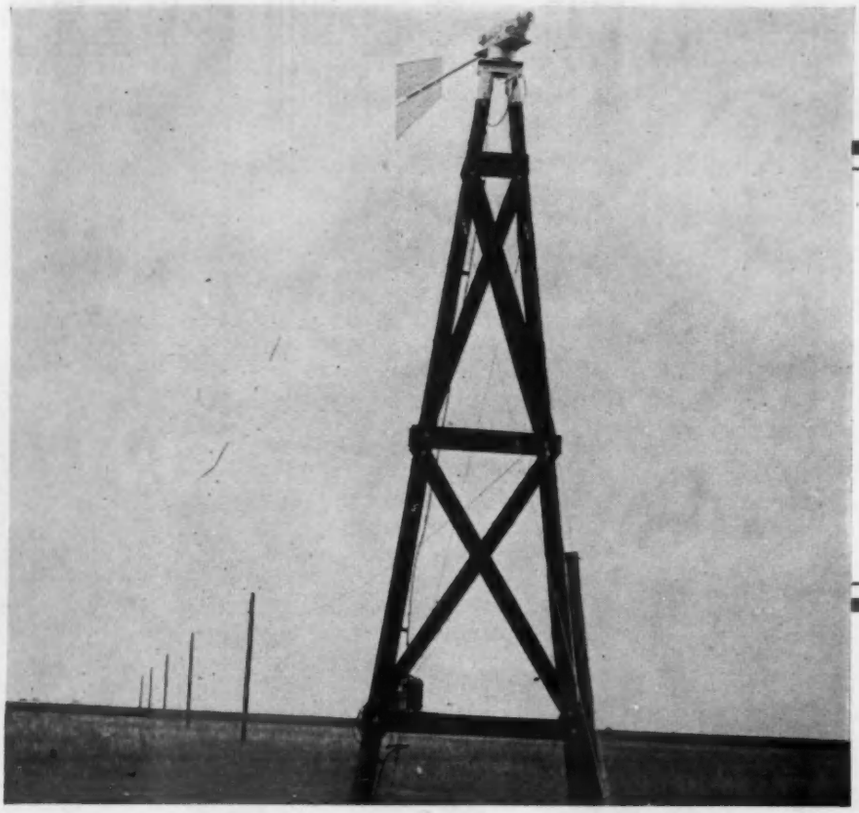


Wind-driven direct-current generator installed on 10-inch line from Dayton to Port Arthur, Texas.

BRAD MILLS
Associate Editor

Wind-Driven Generator *Installation On Line Provides* Cathodic Protection

DEVELOPMENT of a wind-driven, direct-current, cathodic protection unit to check pipe line corrosion has been perfected for The Texas Pipe Line Company by Brance-Krachy Corporation. The new unit depends entirely upon prevailing winds for generating power, and marks the first successful attempt to fight ordinary pipe line corrosion with electrical energy derived from a natural power source. Use of electrical current to check stray current electrolysis and ordinary soil corrosion has been successful in the past, but all previous methods depended upon power derived from some outside source.

In developing and placing in practical service a special wind-powdered, cathodic protection unit, several important factors were considered. Obviously, the basic principle upon which any unit of this type must function was involved, but in addition such factors as average wind velocity in a given area, wind variation, amperage, soil resistivity, and length of transmission lines were considered. Development of the unit was one of the outstanding pipe line engineering achievements of the past three years. The pioneering work was dome under the supervision of J. L. Culbertson, chief engineer, Texas Pipe Line Company.

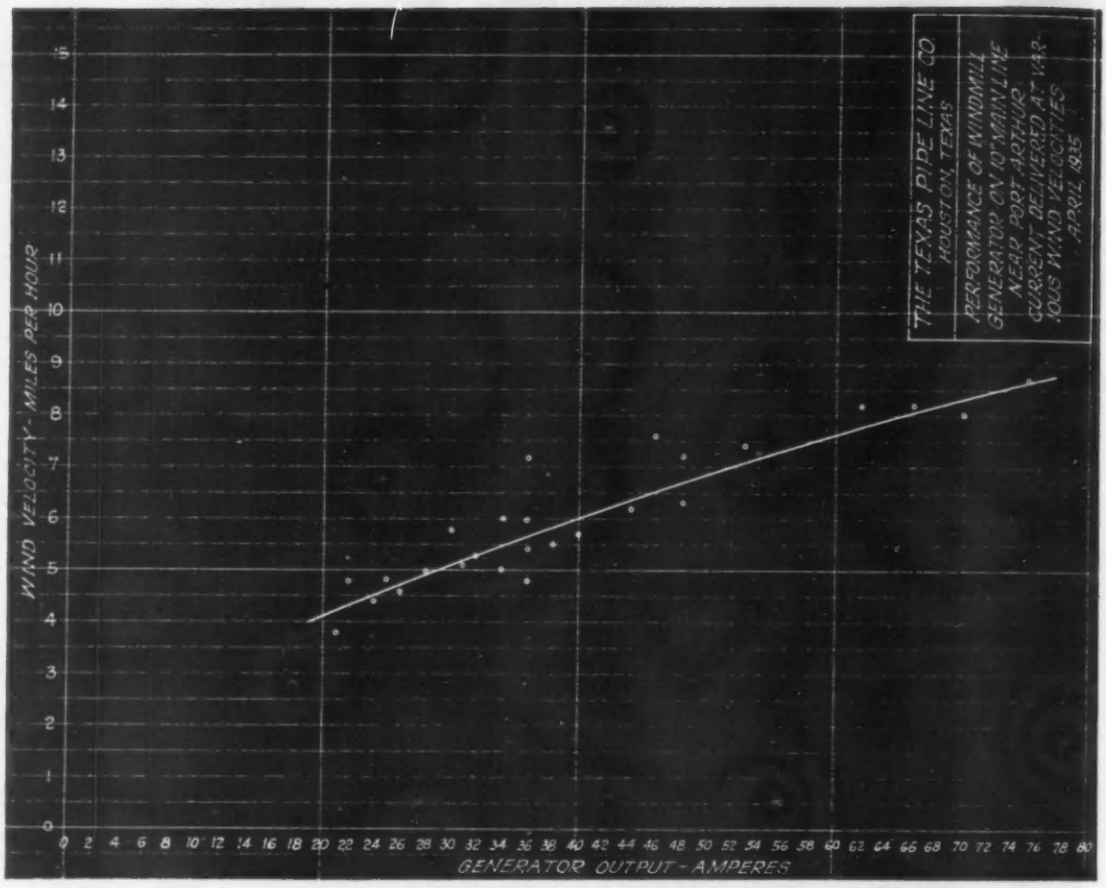
In the experimental work prior to development of the unit, it was necessary to determine the average wind velocity at certain Gulf Coast points. This was found to be about 10 miles per hour, with a daily variation from two to 17 miles per hour, except rare intervals of dead calm. The objective was to design a generating unit that would deliver the required electrical current at the average wind velocity. Previously the amperage required to protect the line at a given point had been determined.

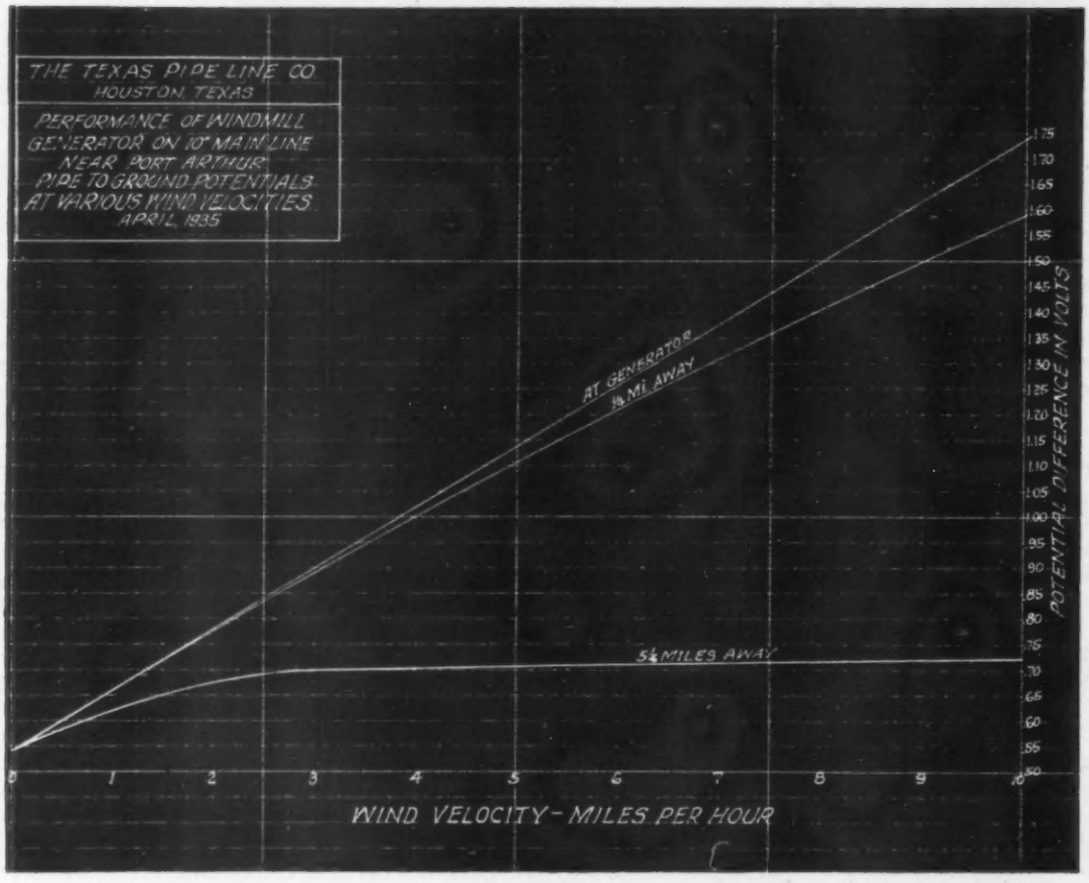
The unit consists principally of a constant-current, variable speed generator of special design; pusher type propeller of proper pitch and diameter to develop power required for the generator; speed increasing gear; necessary collector rings; vane, and automatic brake. The unit rests on steel angles, which in turn are supported on a steel or wood tower ranging from 35 to 50 feet in height, depending upon the terrain. The entire assembly is supported by a special flanged, double roller bearing which allows it to rotate freely with the wind. The unit weighs about 500 pounds, and is being built to deliver from 20 to 100 amperes, depending upon requirements.

Under present conditions, the unit will start rotating when the wind has attained a velocity of nine miles per hour, but during lulls rotation continues until the wind has receded to less than two miles per hour. It is believed that after the machine becomes broken in from use, it will start in a wind of five miles per hour velocity.

The brake stops the propeller when the wind has attained a velocity of 23 to 25 miles per hour, and releases when the wind drops to a velocity of 22 to 20 miles per hour. The brake functions on a spring tension principle and acts to protect both the generator and the propeller.

The unit is placed directly over the pipe line, and the nega-


THE TEXAS PIPE LINE CO
HOUSTON, TEXAS
PERFORMANCE OF WINDMILL GENERATOR ON 10" MAIN LINE NEAR PORT ARTHUR
CURRENT DELIVERED AT VARIOUS WIND VELOCITIES
APRIL 1935
WIND VELOCITY - MILES PER HOUR
GENERATOR OUTPUT - AMPERES


THE TEXAS PIPE LINE CO
HOUSTON, TEXAS
PERFORMANCE OF WINDMILL GENERATOR ON 10" MAIN LINE NEAR PORT ARTHUR
PIPE TO GROUND POTENTIALS AT VARIOUS WIND VELOCITIES
APRIL 1935
AT GENERATOR
½ MI. AWAY
5½ MILES AWAY
POTENTIAL DIFFERENCE IN VOLTS
WIND VELOCITY - MILES PER HOUR

tive pole of the generator bonded to the pipe. The positive current from the generator is carried to point of distribution in the ground by suitable copper wire. This copper lead line runs perpendicular to the pipe line and connects to a heavy ground 1000 feet from the generator. The ground is made of old six-inch pipe in the form of a header. All the eight short vertical pipe sections placed in the ground are filled with ice cream salt to reduce the soil resistance.

The copper wire is strung on five poles, and the header ground also acts as an anchor for the 1000-foot line. The drop from the last pole to the ground is the anchor line. The arrangement is such that current density is obtained. The resistance in the entire circuit is approximately 8/10 of an ohm.

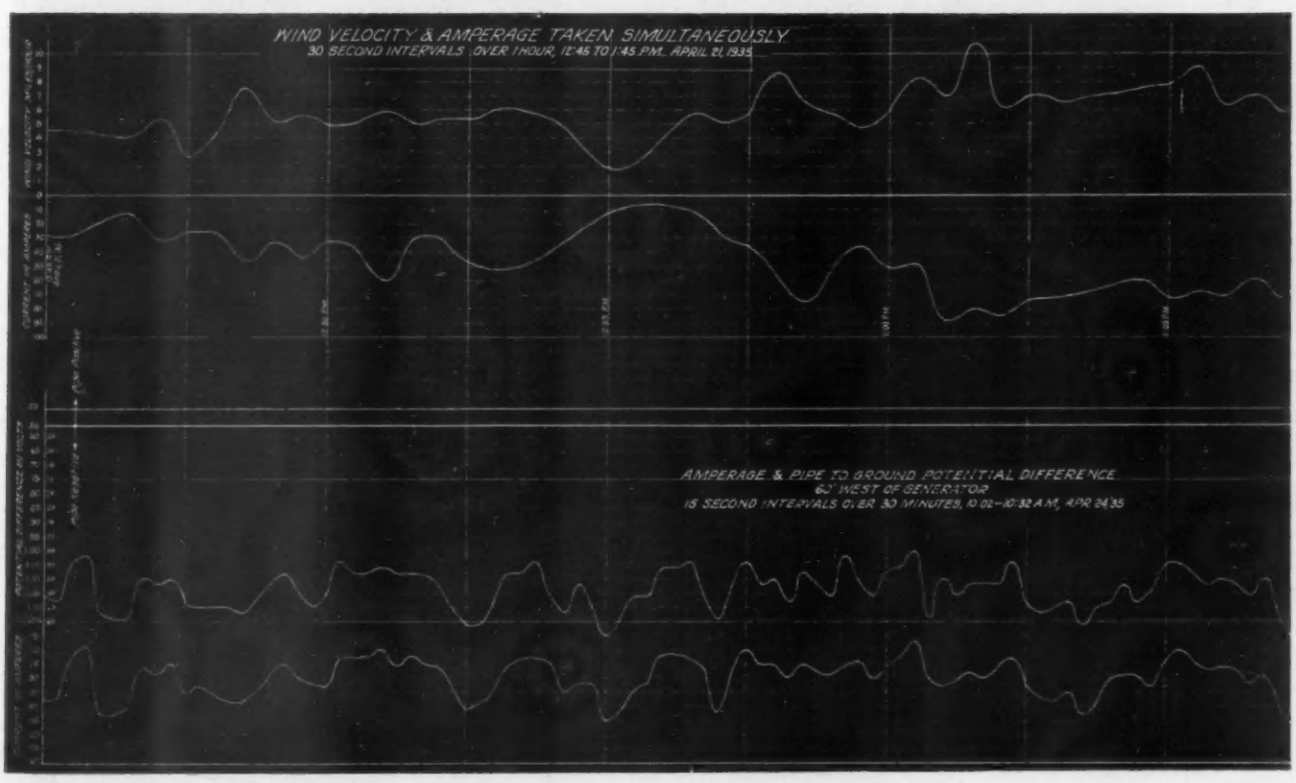
The location of the ground bed 1000 feet from the generator and pipe line gives about the desired field of distribution. From the ground the current finds its way back to the pipe line at hollidays in the pipe coating. The field of radiation at 1000 feet from the line may be sufficient to protect a "hot spot" several miles in extent.

During the actual operation of a wind-driven unit along The Texas Pipe Line Company's 10-inch line west of the Port Arthur refinery, considerable useful data were obtained. The primary purpose of the tests and observations was to obtain data that would enable the company to anticipate the results of similar installations to be made in other districts. The equipment included a compound wound generator enclosed in a weather-proof case and mounted on two creosoted poles, and a two-blade, 14-foot, airplane type wood propeller. The generator was mounted 40 feet above the ground, while mounted on one of the posts at eye level was a 0-50 ampere meter, and a 0-50 volt meter.

The first effort was to determine the relationship between the indicated amperage and the wind velocity at the same moment, as shown by the weather bureau charts in Port Arthur. Indications at various times during several days were taken, but comparisons at the weather bureau were not satisfactory, since the weather bureau wind velocities were average on several minutes time. Because of a wide variation in current and apparent variation in velocities, it was concluded that weather bureau velocities were unsuited for the tests.

Late in April, 1935, an engineer and assistant returned to Port Arthur with additional equipment that included an indicating anemometer, stop watch and special recording voltmeter. The second effort was also directed toward determination of the relationship between wind velocities and current. The watches were synchronized and the indicated readings on the ammeter taken at five-second intervals. Indicated readings of the anemometer were taken at 15-second intervals, because of a longer time being required to write down these readings.

Having previously found the ratio between the indicated


WIND VELOCITY & AMPERAGE TAKEN SIMULTANEOUSLY
30 SECOND INTERVALS OVER 1 HOUR, 12:45 TO 1:45 P.M. APRIL 21, 1935
AMPERAGE & PIPE TO GROUND POTENTIAL DIFFERENCE
60' WEST OF GENERATOR
15 SECOND INTERVALS OVER 30 MINUTES, 10:02–10:32 A.M. APR 24 35

volts and amperes to be one volt to 2.25 amperes, the recording volemeter was used to check the ammeter readings. In plotting these readings it was found that they had to be averaged for 30-second intervals, due to their extreme fluctuation. Similar readings were taken on following days to obtain the full range of wind velocities from two to 15 miles per hour.

In the intervals between the foregoing readings, pipe-to-ground potential readings were taken simultaneously with voltmeter readings, 60 feet west of the negative connection of the generator. The potentials varied directly with the current. Potential readings at other points also were taken with a voltmeter and copper sulphate electrodes. Going away, each reading further removed from the generator showed a diminishing sensitiveness to the fluctuations in current, and became fixed at 10¼ miles west, where readings of .625 volt showed the pipe to be .07 volt negative.

To determine the stability of the positive field after the generator became idle, potential readings at a point 5¼ miles from the generator were taken for an hour, and at a prearranged time the generator was disconnected and potentials read. These readings, after ranging from .70 to .71 during the hour, dropped in a regular curve to .68 in three minutes; to .67 in 37 minutes, and to .64 after 17 hours. Since 17 hours of insufficient wind to run the generator is very unusual in most districts, it is fairly conclusive that the pipe will remain negative to ground at this distance, or considerably farther, at all times.

During the five-day test period, it was found from the recording voltmeter that out of 122 hours, the generator ran 65 hours, or 53 percent of the time. During these 65 hours the output of the generator was 15.75 kilowatt hours. After becoming idle, it was shown that a nine-mile wind was required to start the propeller, but that much lower velocities—as low as two miles per hour—would keep it going. This meant to some extent that lulls were short enough in duration to permit the momentum of the generator to carry the propeller through in motion. Wind of three or four miles per hour was blowing all day, even when the propeller was idle. As the bearings and gears in the equipment become more free, the starting torque undoubtedly will be lowered and the number of hours of running time increased.

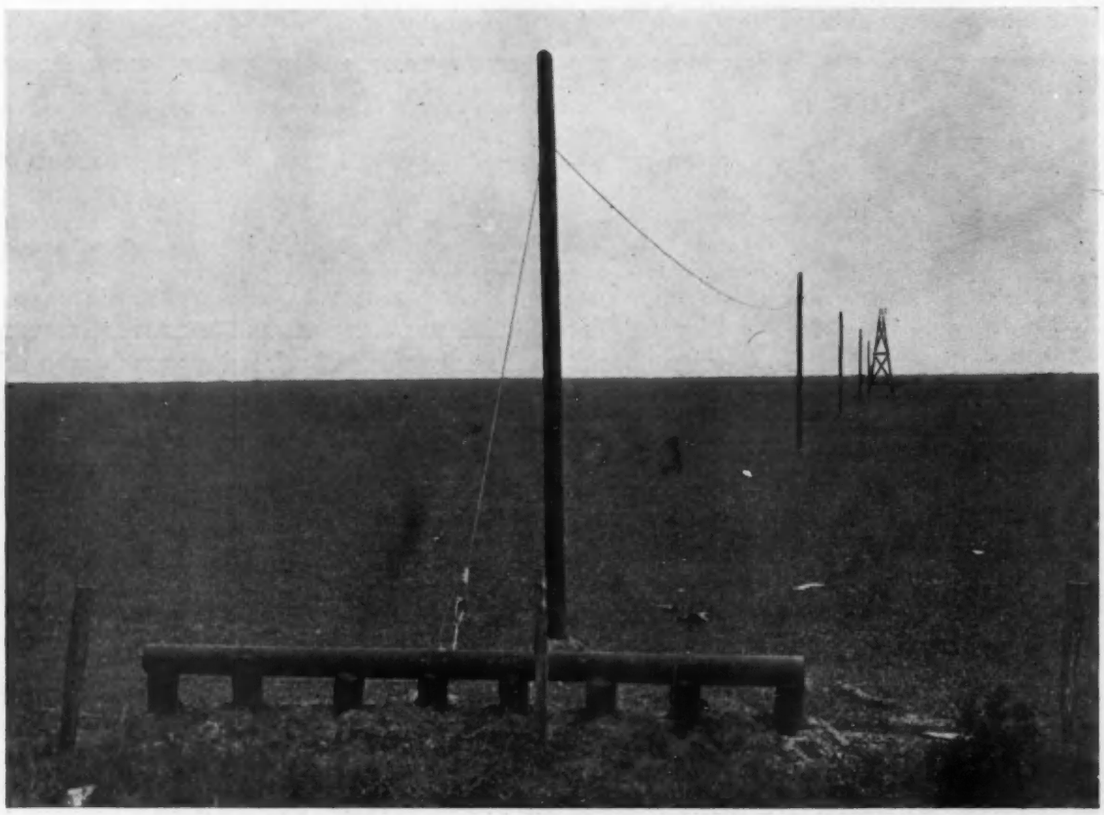
The company now is giving considerable attention to propeller design, and will attempt to develop the ideal propeller for pipe line purposes. It also has been suggested that a time relay, operated by a storage battery and set for short period contacts might be used to start the propeller periodically until the wind velocity increases enough to keep it going. Some thought has been given to limiting the output of the generator only to the highest rate compatible with its construction. This higher capacity is being considered with the view of discharging excess current to storage batteries for use during idle time, or for controlled current at all times.

The unit as now constructed and used does not embody the special features mentioned in the preceding paragraph, however, and it is likely that the simpler type now in use will prove effective in checking corrosion.

In most sections of the country, the wind is less variable than along the Gulf Coast, the district in which the unit was developed. The more favorable winds prevailing in other districts should make the unit valuable in checking corrosion of long standing.

The construction and operation of the wind driven unit are based on principles well known to all pipe line engineers. The objective is to generate and deliver a positive current to the soil near the line, pass that current through the soil to the line back to the generator, and thus control the potential relation of the pipe and surrounding soil. In this manner the pipe is maintained cathodic and corrosion becomes negligible.

This development should prove very valuable in combating corrosion in "hot spots" remote from sources of commercial power.



General arrangement of ground bed, transmission line and generator tower.

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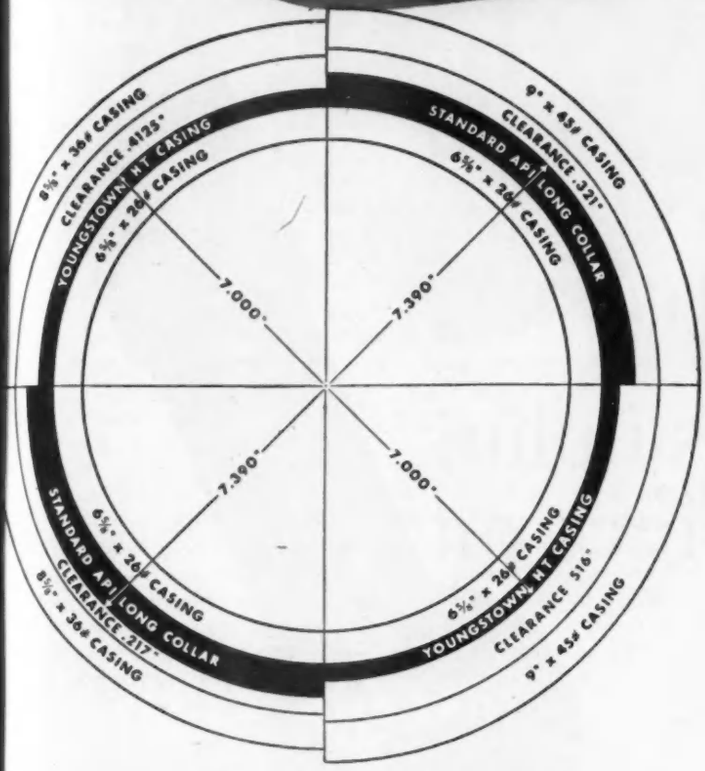

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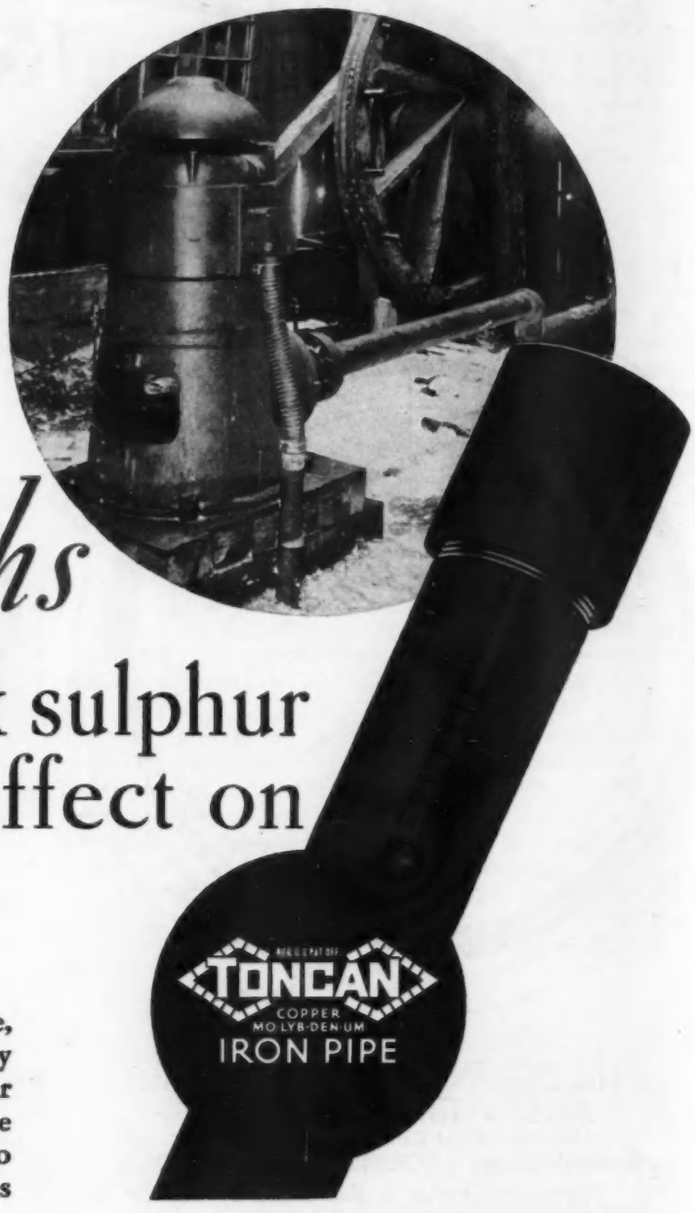

16 months

in vicious black sulphur water had no effect on

The Sharples Solvents Corporation, Wyandotte, Mich., put down a well and found that the only water available was a quite vicious black sulphur water. Ordinary pipe used in the discharge column and shaft of the air lift equipment had to be taken out and replaced three or four times a year.

Then Toncan Iron Pipe, installed by the Sterling Pump Corp., South Bend, Ind., was given a trial because of its past performance where corrosion was a factor. In December, 1934, the pump was pulled for the purpose of inspecting the pipe. Results were surprising — after 16 months of service no noticeable deterioration could be found, and the original pipe was reinstalled without a change of any kind.

This is typical of the performance of this modern alloy of refined open hearth iron, copper and molybdenum wherever severely corrosive conditions are encountered. You can read all about Toncan Iron Pipe and its records in industrial service in "Pipe for Permanence." Ask for a copy of this interesting book.

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Reconditioning Reclaims Fourteen Percent of 79 Miles of *Pipe Line*

JULIAN L. FOSTER
Chief Engineer, Lone Star Gas Company

LONE Star Gas Company needed 70 some odd miles of 12-inch pipe to construct a line from the new Long Lake gas field in the southwestern corner of Anderson County, Texas, to a point on our system, near Waco. We had in the ground in Southern Oklahoma and West Texas all, or a part, of five 12-inch lines that were either one of parallel lines or were connected to fields that were wholly or partially depleted. The total length of pipe in these lines, which had been in the ground from five to 15 years, was approximately 79 miles, so we felt that it would be possible to get 70 miles of good, usable pipe out of the 79 miles to be taken up. The weighted average age of the lines was 13 years, and of the 79 miles which was taken up 81 percent of the pipe was found to be in a good and usable condition after having been cleaned; 14 percent was made usable by spot welding and patching; and five percent had to be junked.

In removing the pipe from the ground, a ditcher was used to strip the pipe and four tractors, with side booms, were used to lift the pipe from the ground. By careful operation of the "cats" the pipe was lifted from the ground fairly uniformly and with very little bending, and left on skids over the ditch. Since the pipe lines removed were coupled lines, the couplings had to be removed. This was done by cutting the bolts. After the joints were pulled out of the middle rings by a tractor with a front end winch, the pipe was hauled to one of the four shipping points used.

Three cleaning machines were set up after the pipe had been stacked at a shipping point and the cleaning done. I might say here that at one shipping point, we had about 36 miles of pipe stacked, and 36 miles of 12-inch pipe at one place looks like an awful lot of pipe. During the cleaning operations, it was found to be necessary to run some of the joints through the cleaners as many as four or five times in low speed, where the scale on the pipe was unusually hard, slick, and tenacious, to get it thoroughly cleaned, and it was also found to be very helpful to have a man hammering the pipe as it came from the cleaner, to loosen and knock out the scale which was unusually hard, from the pits. Incidentally, we found that it was more effective to run a joint that was fairly badly scaled through the machine slowly one time, rather than to run the joint through the machine several times at a faster speed. Most of the pipe, however, was cleaned satisfactorily by putting it through the machine one time at a fairly good speed. As the pipe came from the cleaning machines, it was thoroughly examined by inspectors who measured the deepest pits with depth gauges and when a joint of pipe was found to have a pit or pits deeper than one-half the thickness of the pipe wall, it was put aside to be "reconditioned."

Welder making spot patches designated by chalk marks.

The speed of the cleaning operations, of course, varied with the amount and character of scale condition of the pipe. With three machines operating, the best day's performance was 614 joints, or approximately 2.2 miles, and the slowest performance was 118 joints, or .425 miles. A straightening machine was used to straighten the joints that had been bowed while being taken up and also those that had been used as side bends or over bends in the line.

After the cleaning operations were completed, a battery of four electric welding machines was set up to spot weld pits and weld patches over the thin wall areas of the pipe which needed to be "reconditioned." In arriving at which joints should be spot welded and patched and which joints should be junked, the foreman in charge estimated the time required and the material necessary to "recondition" a joint, after the joint had been marked with chalk by an inspector, showing the number and location of pits to be spot welded and the amount of thin wall area to be covered with a patch. If it was estimated from the time and material required that the cost for "reconditioning" the joint was less than the value of good second-hand pipe, the joint was "reconditioned;" otherwise the joint was junked. The pieces used for patching were, of course, obtained from the junked joints. With the four welding machines in operation, the best day's performance was the spot welding and patching of 53 joints, or 973 feet, and the poorest day's performance was 12 joints, or 216 feet. Most of the pipe was ¼-inch wall thickness, 600-pound mill test, and we were naturally anxious to know if the spot-welded and patched joints were as strong as we thought they should be. A very bad joint was selected; that is, one that had 118 spot-

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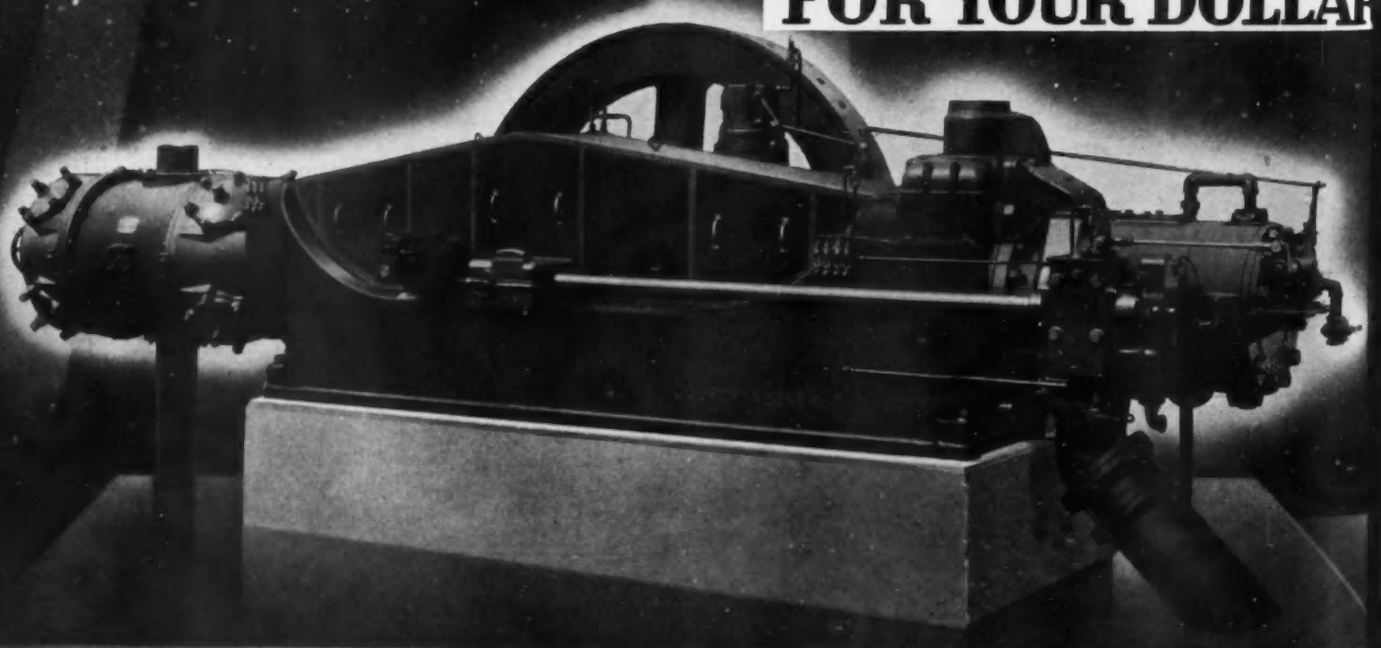


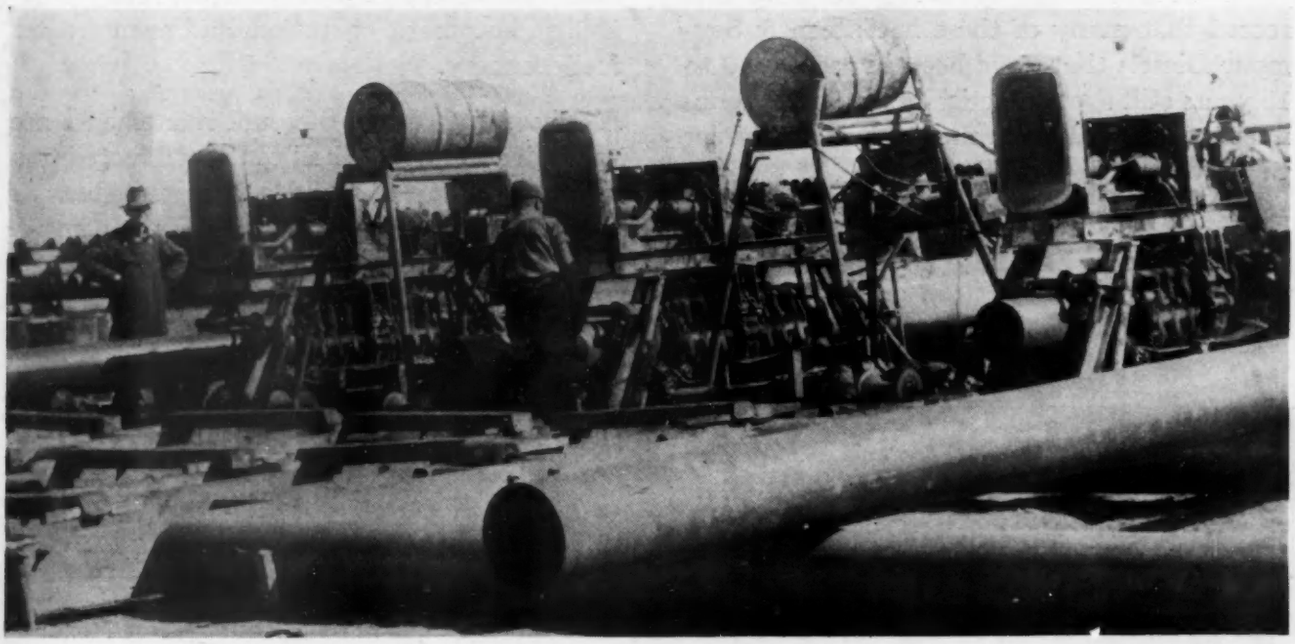
A portion of the stacked pipe and cleaning crews at reconditioning concentration point.

welded places, varying in size from approximately one inch to two inches in diameter and 14 half-sole patches, varying in size from about two inches by four inches to eight inches by eight feet, welded up the ends and pumped it up to 1070 pounds pressure. We found no leakage whatsoever at that pressure, which was a very good test on 600-pound mill test pipe.

When the cleaning and reconditioning was completed and the pipe was shipped and strung on new location, it was found that out of more than 18,000 joints that were being relaid, only about 1500 ends had been damaged, by belling during lifting, and damaged during loading and unloading, that had to be recut to be prepared for electric welding with liners in the new line. After the joints had been welded together and the line was on skids over the ditch, a portable cleaning machine, equipped with a priming head, was put over the line to remove the rust and dirt which had accumulated on the pipe while in transit and during construction, and to apply the primer. This additional cleaning operation made it possible for the priming coat to be applied on clean, practically bright, metal, and we feel that the cleaning operation just ahead of the coating was justified, as it made for a better coating bond to the pipe, and improved the effectiveness of the coating application. A holiday detector was used after the hot coating was applied. In fact, at times two detectors (or stool pigeons as they are sometimes called) in series were used to find imperfections in the coating, and were used again after patching until the inspection, by means of the detector, did not show any remaining holidays. The line was then wrapped and put in the ditch and backfilled.

We feel that the method of inspection and culling the pipe was effective because of the fact that in bringing the pressure on the 70 miles of completed line up to its final closed in pressure test of 450 pounds for 24 hours, there were only five blow-outs, all caused by the factory lapwelded seam opening up, with no broken field welds, except as mentioned at the seam. No pressure was lost during the above mentioned 450 pounds closed in pressure test, assuring us that we had an absolutely bottle tight line.

Battery of cleaning machines used by Lone Star Gas Company in renovating its salvaged 12-inch line.



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Corrosion frequently causes pitting in a short while.

Note pit and scale on enlarged photograph of this pipe.

Special Attention to "Hot Spots" Has Reduced Corrosion Losses

BRAD MILLS
Associate Editor

CORROSION of pipe lines and equipment is a problem in many sections of the United States, but serious and rapid damage from this form of disintegration is not so widespread as is generally believed. It occurs to some extent in the most favorable areas, but is most serious in sour soils, in and near salt water, in oil and gas fields showing hydrogen sulphide, and in congested areas having numerous electrical power lines. Corrosion in air, water or soil starts with exposure and continues without interruption, but the intensity of this wasting away is dependent upon numerous factors well known to the average chemist or engineer.

Corrosion is the disintegration, rotting, wasting away or rusting of metal. It is the tendency of the metal to revert to its original state, and is most commonly referred to as a form of rust. Some force is required to bring this disintegration about, since a metal will corrode in a fixed locality only to the extent it reacts with some medium or constituent.

Much has been learned about corrosion during the past 10 years. The "driving force" of the reaction that will sometime reduce the pipe to rust is always at work. Corrosion is very slow under favorable conditions, and pipe and equipment may remain serviceable for 30 or 40 years in a few districts. The average service life, however, is much shorter and the effects of corrosion are felt in less than half these maximum service years.

In extremely sour soils or in districts producing sour crude oil, pipe lines and equipment often show the effects of corrosion during the first few years of service. In a few places in the United States, pipe lines have corroded through and become unserviceable in one-fourth of the expected service life of lines in more favorable districts, soil having been the chief factor in this rapid disintegration.

Hot Spots

In successfully combatting corrosion, it is necessary to become familiar with conditions along a pipe-line system. In a 500-mile line, one company determined after a long series of experiments that rapid loss of pipe from soil corrosion was confined to less than five percent of the total length of the line. Corrosion was present at all points, but it was slow along the greater part of the line. The net result of this determination was the concentration of preventive effort along sections of the line giving most trouble. Prior to this discovery, the entire line had been given almost uniform consideration.

Most of the major pipe-line companies are conducting exhaustive surveys to determine the resistivity of soils along the rights-of-way. Corrosion naturally is most rapid at points of lowest resistance. One company, however, after attempting to base its distribution of preventive work on the results of a soil resistivity survey, discovered after some time that such a survey was not effective unless changing weather conditions and other factors were considered. The percentage of moisture in the average soil varies sharply from month to month. Soil surveys are nevertheless very useful when used in connection with

other work directed toward location of areas responsible for the bulk of damage from corrosion.

Since corrosion may be five times as rapid along five or 10 percent of the total length of a pipe line as along the remaining 90 or 95 percent, pipe-line companies are able to give even greater attention to the troublesome sections, while virtually neglecting the most favorable areas. Such a concentration of effort has made possible the treatment of pipe along the "hot spots" to a greater extent than would be possible where corrosion was recognized as a serious factor along the full length of the line.

In diverting most of the corrosion cost to a small part of the pipe line, a number of companies are spending during the construction period twice as much per foot along the troublesome sections as was spent per foot when lines were treated from end to end in a uniform manner. In a few lines, especially those passing through questionable soils, the cost of intensive treatment of new pipe in the sour soil sections may approximate the cost of a uniform but less effective treatment along the entire length of the line. Regardless of the question of the necessity for treatment of pipe in favorable soils, the treatment in "hot spots" is difficult to overdo.

One Gulf Coast pipe-line company has divided its external corrosion problem into three phases. These three divisions are designated as (1) the determination of "hot spots" in the soil, (2) preventive measures against corrosion during construction, and (3) the restriction of corrosion in troublesome areas after placing pipe in service.

During the early period of pipe-line construction, it was the custom to lay a long line without regard to "hot spots" in the soil. They were suspected, but the rule was to await serious damage from corrosion before mapping such corrosive strips of soil. Such a course was very expensive, and was replaced by the more modern and efficient method of determining sour soil areas before or immediately after construction of pipe lines.

A number of pipe-line companies dig up and inspect short sections of the pipe at regular intervals in an effort to locate "hot spots" along the line. One company uncovers and inspects 10 feet of pipe every 500 feet, and has determined in advance of serious damage the sections affected most by corrosion. The uncovering operation also has helped to determine the value of previous work done to test the resistivity of soil along the right-of-way. The depths of the pits are measured, and through comparison the most corrosive soils are found.

Corrosive Tests

A Gulf Coast pipe-line company has been conducting a series of experiments to determine the relative importance of moisture, oxygen, and hydrogen sulphide in corrosion of pipe. It was necessary in the course of these experiments to confine observations to internal corrosion, however. It was found that moisture, or water, must be present in all forms of corrosion. A number of short pipe sections were used, and after a year the inside of each section was examined. Some of the pipe sections contained only crude oil and hydrogen sulphide, while others contained crude oil, hydrogen sulphide, and salt water.

In the course of these experiments a number of combinations were used. Some of the short pipe sections contained straight West Texas crude oil, free from water; others contained West Texas crude oil and iron sulphide scale, and a number contained sour West Texas oil, iron sulphide scale and salt water. The presence or importance of oxygen was not considered during the tests, since it was difficult to determine its volume or significance.

All samples were tightly closed, and the inside of the pipe sections were examined after a year or more. It was found that the sections containing sour West Texas crude that was free from water had not corroded. The sections containing West Texas oil and iron sulphide scale also had failed to show damage from corrosion. The pipe sections containing sour West Texas crude oil, iron sulphide scale and salt water showed serious damage from corrosion.

While it was necessary to test corrosion from an internal standpoint through these experiments, the determinations apply equally as well to external corrosion. This work proved that one of the most deadly corrosive mediums is a combination of sour crude oil, salt water and air. It proved equally as well that sour crude oil free from water will give a minimum of trouble in pipe lines. Hydrogen sulphide gas, when mixed with air, represents another problem, however.

An experienced pipe-line engineer, walking along the average pipe-line right-of-way, can detect most of the sour soil areas by sight. These troublesome strips usually are in the low, poorly drained areas where minerals and salts collect. A check of the soil resistivity generally follows the preliminary observations, and the boundaries of the sour soil strips are mapped.

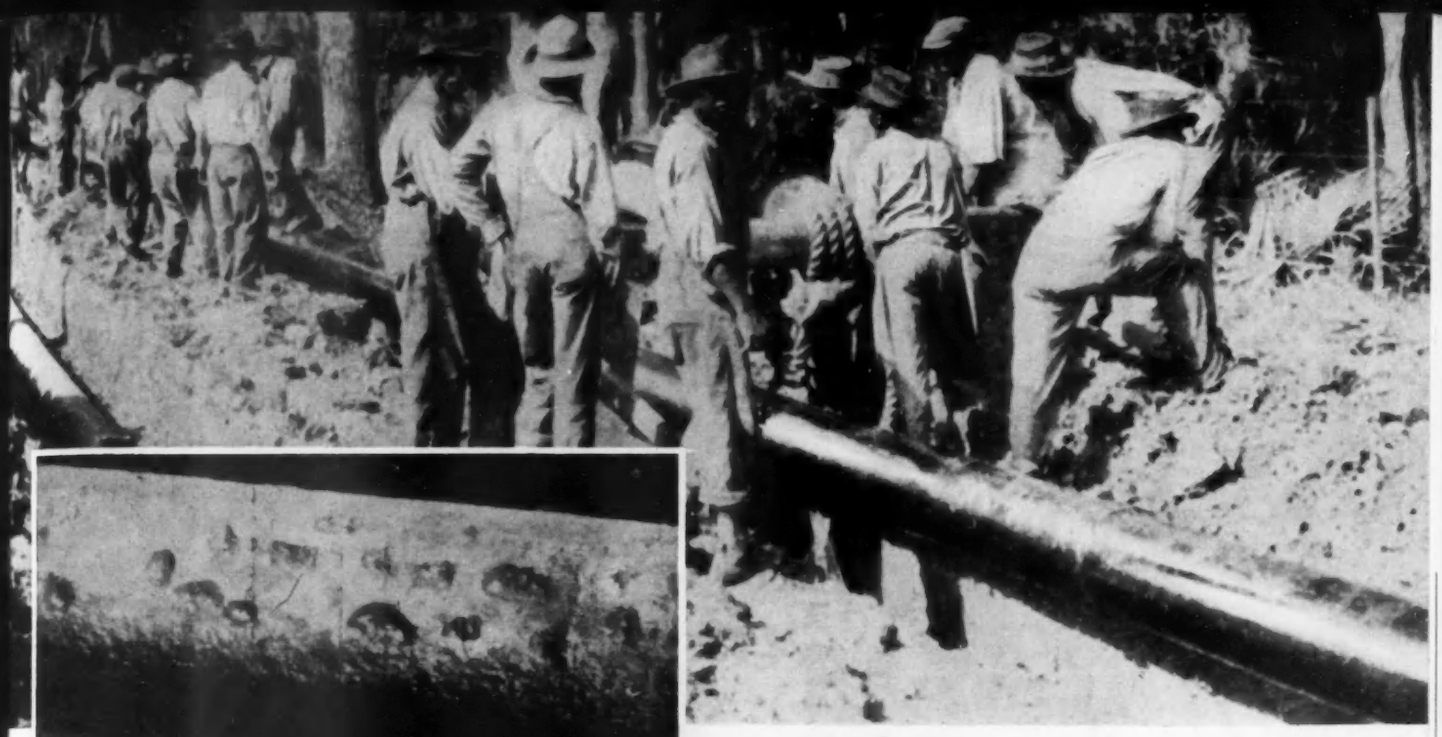
Treating or coating of pipe has been reduced to a more exact practice. It now is the custom to clean all pipe before treating it. Even new pipe is thoroughly cleaned before application of the priming coat. A common practice is to follow the priming coat with a heavy application of asphalt. The asphaltic coat is tested for breaks and is wrapped. Other forms of coating have proved effective, but the principal of application has not differed from the conventional form.

The first central coating and treating plant built in the United States was completed recently at Houston, Texas. This plant coats or treats pipe to any specification, prior to shipment to points of use. Coating of pipe in wind or rain along the right-of-way has not been satisfactory. A central coating plant insures uniform treatment during outdoor conditions that would not permit effective treatment.

A major Gulf Coast pipe-line company has conducted a long series of experiments to determine the pressures and volumes necessary to keep water in motion in a sour crude oil line. The tendency for salt water to settle in low places has resulted in serious internal corrosion. It was proved that an increased velocity of the fluid gave a sweeping action that prevented water from standing in the low sections of the line. Where a low velocity was maintained, the oil and emulsion simply slipped over salt water that had collected in the lower side of the pipe in depressions. When this salt water was left in place it accelerated corrosion. In connection with this work, the relative corrosive effect of salt water and fresh water was studied. The lighter sour crudes required a greater velocity, or line disturbance, than the heavier crudes, since the floating tendency of the former was a factor in their resistance to a deep sweeping action.

Pipe Service

Considerable study of pipe-line service life has been made during the past two years. One line in Pennsylvania that was laid in 1859 is still in service, but such a long life is phenomenal, even in sweet soil. A pipe line laid in southwest Texas in 1902 was uncovered and salvaged recently, and the pipe was estimated to have been good for an additional 20 years of service. An Eastern pipe line



Extending life of 7 year old line by 11 years

Reconditioning

Illustrated above is the first reconditioning job with NO-OX-ID. This line had been in service seven years. Inset to left shows pitted condition. **The coating of NO-OX-ID extended the life of this line eleven years without a leak.**

NO-OX-ID is simple to use and most effective in results. It kills the pitting chemically. Combinations have been developed to meet all conditions of corrosion and soil action.

NO-OX-ID lends itself to every reconditioning problem.

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NO-OX-ID
IRON + OX = RUST
TRADE MARK
The Original Rust Preventive

A recent job of reconditioning with the NO-OX-ID Master Coat.

laid in 1881 is still in service, but maintenance has become expensive.

In uncovering and studying very old lines that have given exceptional service, it has been observed that pitting has been very uniform, both as to depth and distribution along each joint. This tremendous distribution of pitting in connection with the giving off of a negligible current that causes corrosion did not permit rapid disintegration of the pipe in any one spot.

A number of pipe lines have given serious trouble in less than four years. These lines either pass through very sour soils or carry sour crude oils that contain varying amounts of salt water. External corrosion is most common, however, and is feared by all pipe-line companies. One company has found it necessary to replace its line regularly every seven years in a certain section along the Gulf Coast. Experience has given this company the exact information it needs in this district.

When pipe starts giving serious trouble along "hot spots", the present tendency is to uncover the troublesome sections, spot weld the pits, and place the line back in service. Until a few years ago it was the custom to replace seriously damaged sections with new pipe.

Electrolysis

When a new pipe line is laid parallel to an old line, corrosion is much worse in the the new line than in the old. The new line is much more susceptible to gathering and giving off electrical energy than an old rusty line. A clean iron surface scales rapidly at first, but after a thin film of oxide has covered the surface through mild corrosion, the film acts as a "scabby" barrier to rapid disintegration. This to some extent helps to protect the older line.

Corrosion is being accelerated in many sections by stray current electrolysis. This is caused by leakage of electrical current from a returning medium to the pipe line. The pipe line offers the path of least resistance for the negative current, and helps to carry a portion back to the generator. No trouble is caused by the picking up of this returning current, but serious damage occurs from corrosion where the current leaves the pipe line. A pipe line paralleling or crossing an interurban track may pick up current and return it to the generating plant, where the intended returning medium is the track itself.

A pipe-line company recently discovered that its line was picking up current from an interurban track and returning it to the generating plant through a lake. The section of the pipe line paralleling the lake was blocked off or insulated from the remainder of the line, and the flow of current was stopped. The current was being picked up on both sides of the lake at points near the track.

A Gulf Coast pipe-line company bonds or connects copper wire to its line and connects the wire to the negative return to the power house. In this way the stray current is picked up from the pipe without damage.

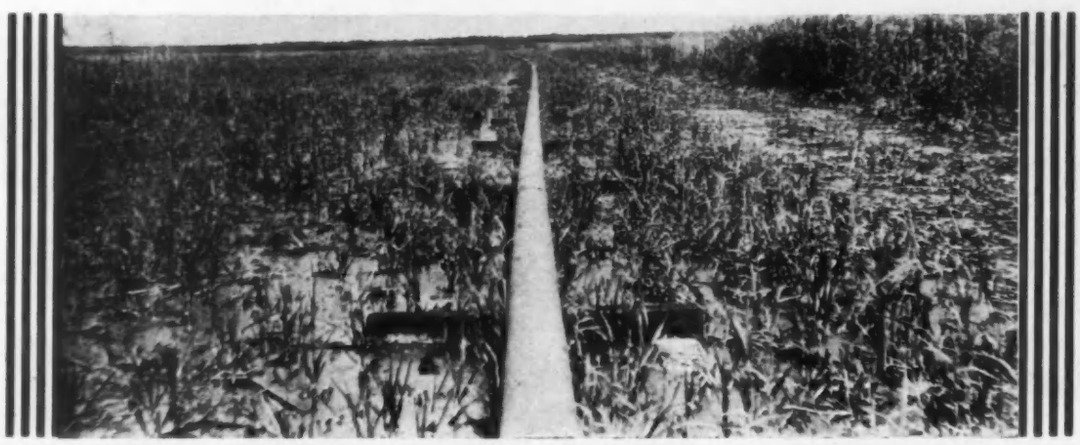
Another Gulf Coast company runs the positive wire from a rectifier to a number of iron bars buried in the ground near the pipe line. The current goes through the soil to the pipe line, follows the line to the negative return to the rectifier, which is a copper wire bonded to the pipe line. In this manner the current on the line is controlled and damage from corrosion is prevented. This method is being used to overcome natural corrosion, rather than electrolysis. The latest type installation includes a wind-driven generator that stands over the line, picks up the negative discharge from the line, and generates a current that is sent into the soil near the line.

Corrosion is generally recognized as an electro-chemical reaction that causes the disintegration of iron. Whether the reaction is mostly chemical or electrical is not as important as the fact that it is possible to check this wasting away of metal. Prevention or reduction of the discharge of electrical current from the pipe line is the chief objective in every case. This is being achieved through better protection from exposure and by withdrawal of current from the lines where it might leak off and cause corrosion.

Corrosion of pipe-line equipment and tanks does not differ radically from the corrosion of pipe lines. The same causes prevail, but the same remedies may not be applied with equal ease. Tank roofs are eaten away in three or four years in fields yielding very sour crude oil and salt water, while the bottoms become unserviceable in about twice the time. Fresh water is kept in tank bottoms to check corrosion, but it is more difficult to protect the roofs.

External corrosion of pipe lines is much more common and more serious than internal corrosion, but the same forces bring about the disintegration. All major pipe-line companies are active in the fight against both forms.

Stretch of swamp land, which is apt to be a "hot spot."



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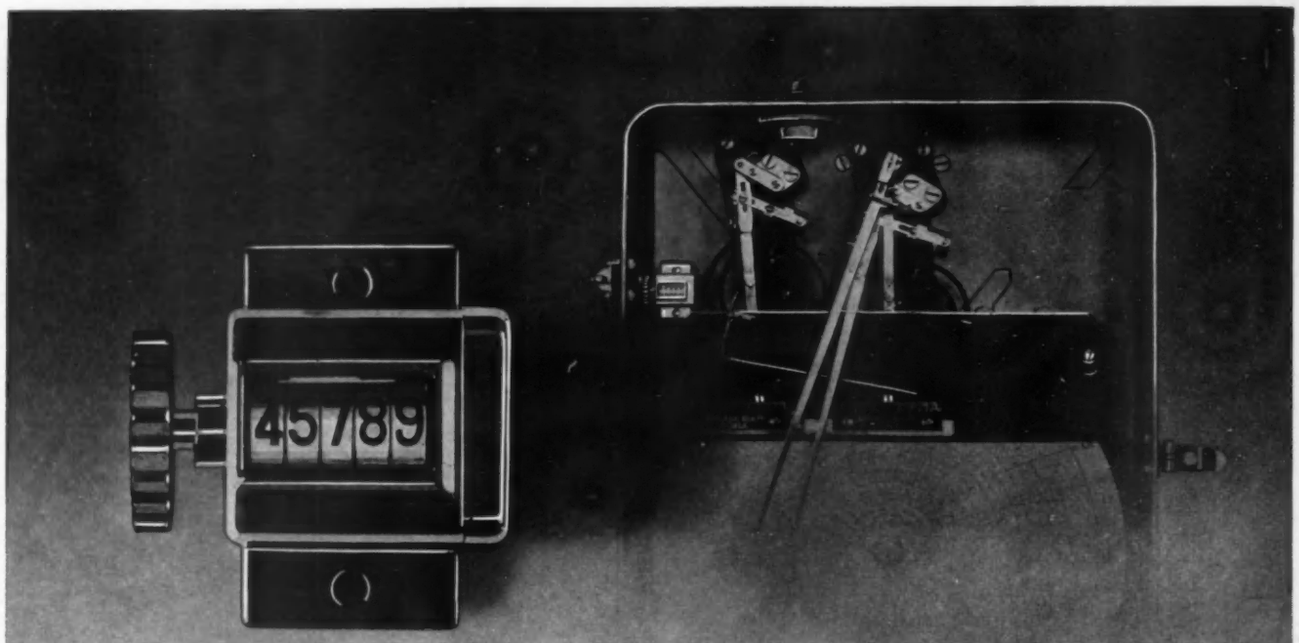

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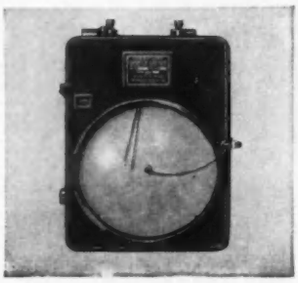

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247

Pipe Reconditioning Work

Found Economical by United Gas System

EARL S. POST
Staff Representative

RECONDITIONING of a whole pipe line rather than replace worn joints frequently has been found to be the most conservative manner of maintaining gas lines. This especially is true in areas where corrosion is a problem.

One of the illustrations of this type of work was in the replacement of the Calliham unit of the Bruni-San Antonio trunk gas line of United Gas Public Service Company. Salty chalk formations and other corrosive elements come in close contact with this pipe in several areas. As a result, considerable damage was done to the pipe and leaks resulted.

Leaks in trunk gas lines frequently are more costly than breaks in oil lines, in as much as they interrupt the service constantly in demand by thousands of consumers. To cut a line for any length of time means a pressure decline, and possibly a complete cut of service.

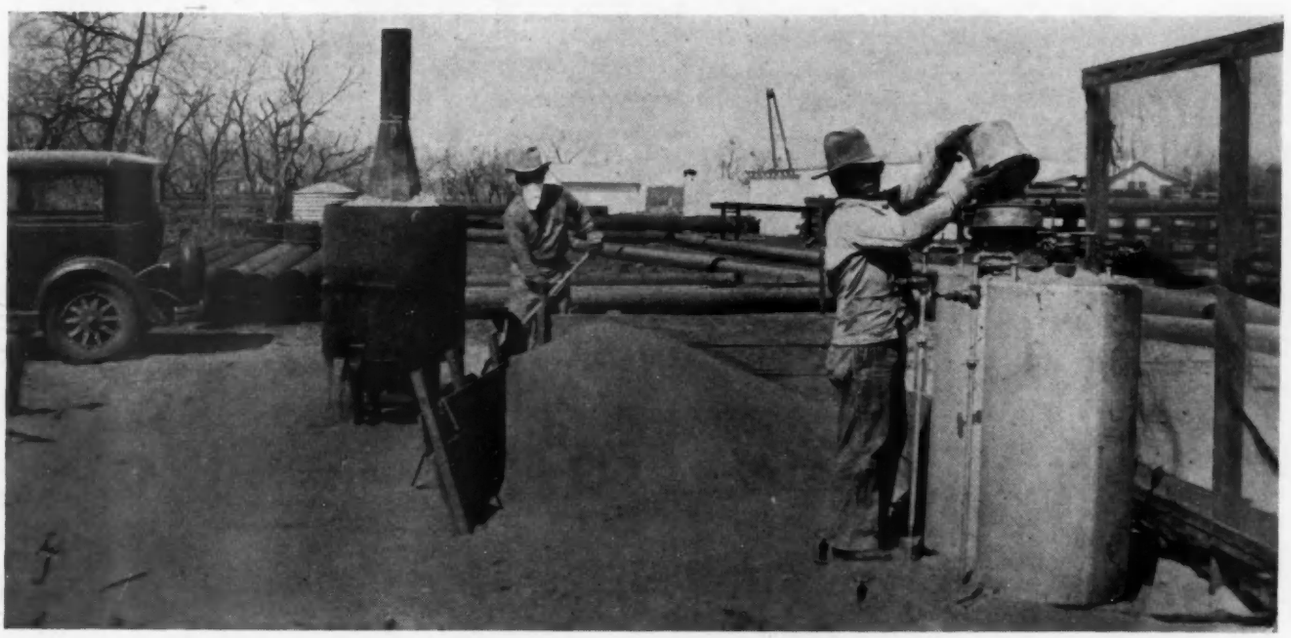
With the above in mind, United System engineers laid a complete new line in this section, using the line in service until the cut over into the new line. When the new line was placed into use, the miles of used pipe was disposed of in one of two manners, either sold as junk or reconditioned for future use.

Reconditioning Methods

The company's pipe reconditioning crew and equipment were moved into Calliham, where preparations were made to work over the salvaged pipe. As a result of the work, United Gas System saved many thousands of dollars.

The first step in this project was to haul the pipe into the Calliham yards and give it a preliminary inspection. The damaged pipe was discarded and the better pipe was cleaned by knocking off the scale and other dirt, after which it was again

Left: Preliminary Cleaning and Inspection of Pipe
Below: Mixing Equipment for Sand Blasting Pipe



Cleaning Pipe With Sand Blast

inspected. Large holes sometimes develop after handling the pipe illustrating the weak spots.

From this point, the pipe is placed on a rack where it is cleaned with a sand blast. The power for this blast is provided through a gasoline compressor unit hooked up to several storage units made of sections of large diameter pipe. These storage units are connected to a drying and mixing container, where the sand is loaded to be blown on the pipe to be cleaned. The blast is through steel nozzles. While these nozzels are of steel they are quickly cut to pieces under the heavy blast of sand. Various attempts to temper the steel to a point that the sand will not cut it have been attempted, but none have been successful.

After the pipe has been cleaned with sand blast, it is again inspected and the outside walls gauged. The gauge shows any pits greater than minor scars. These pits are marked and the pipe passes to the next stage of reconditioning where all marked pits are spot welded with an electric welder.

The pipe then is primed and coated with an insulating pipe covering, after which it is stacked and ready for use. The priming and coating operation is repeated when the pipe is relaid into a line, assuring a complete covering from elements of the soil.

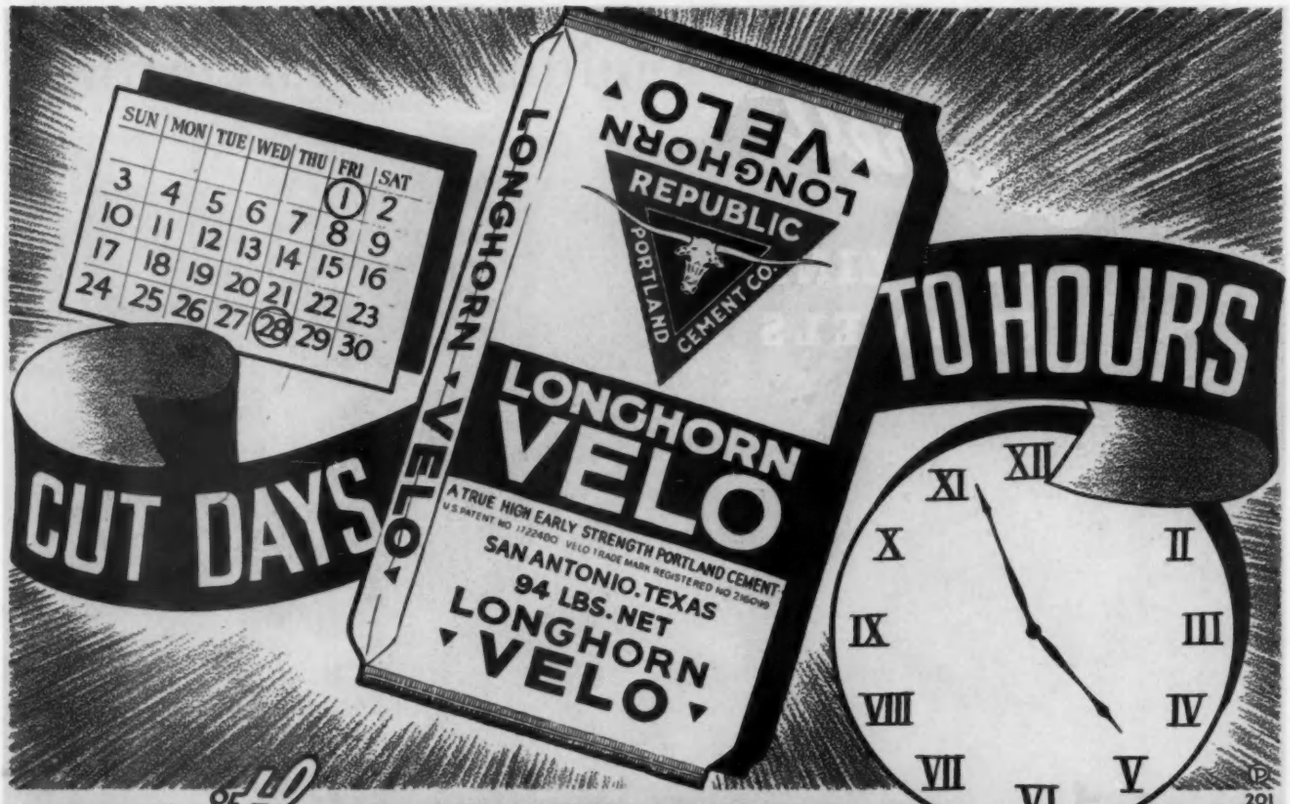
Salvaging Economical

Of particular interest is that only a small sum could have been recovered if all the pipe had been sold for junk or to a second-hand pipe dealer. On the other hand, fully 50 percent of the pipe was salvaged and the remainder brought a junk price. The cost of reconditioning pipe is very small in comparison to its value after having been reconditioned.

The result of the whole proposition is that if the pipe had not been reconditioned, the cost of laying entirely new pipe in the section of the trunk line would have been great. It is probable that repairing of the line would have been resorted to rather than the method used. Now, the salvaged pipe can be used for replacement work in another portion of the line.

The line removed is several years old, but corrosion in spots made the wear rapid. With new and reconditioned pipe now in the line, worry with leaks and breakage have been reduced to a minimum for at least several years.

Compressor Unit for Sand Blast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LONGHORN VELO is a plastic cement, producing dense, uniform, water-tight concrete without the use of admixtures.

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SPEED is today's demand . . . in building, in highway construction, in the oil fields and in industrial plants. To meet this demand for faster concrete construction without sacrifice in quality or permanence or without excessive increase in cost . . . the Republic Portland Cement Co. offers LONGHORN VELO.

LONGHORN VELO is a True High Early Strength Portland Cement manufactured under a patented process developed in Denmark and used extensively throughout the world and in greatly increasing quantities in America during the last decade.

True VELO CEMENT — LONGHORN VELO — is now available in Texas. Manufactured in a modern cement mill, of Texas' finest cement-making materials and under the supervision of VELO chemists and engineers.

WRITE US for specific information regarding the advantages and economies to be obtained by using LONGHORN VELO.

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Barrett

PIPE LINE ENAMELS

Reproduction of the micrograph above shows the interlocking of the flakes of the internal reinforcement used by Barrett. By laminating with the waterproofing agent they give Barrett Pipe Line Enamels unusual toughness and resistance to soil stresses.

For pipe of large diameter, The Barrett Company will furnish equipment required to revolve pipe and spread enamel.

Effective . . . along any right of way

Barrett Pipe Line Enamels are the result of 81 years' experience in waterproofing all types of underground and underwater structures. They are a combination of specially refined coal-tar pitch and a unique, non-porous, dielectric flake-type filler. Under the severe conditions along the right of way Barrett Pipe Line Enamels, when properly applied, offer effective protection against soil acids or stray electrical currents. Barrett engineers will gladly assist you in working out the right coating and the right method to assure maximum protection at lowest cost per year of service.

THE BARRETT COMPANY, 40 RECTOR STREET, NEW YORK, N. Y.

Central Reconditioning Plant Is Built for *Reclaiming* California Pipe Line

Old Protective Coating Is Removed by Heating; and Screw Threads by Cutting; Before Reconditioning the Pipe for Additional Service

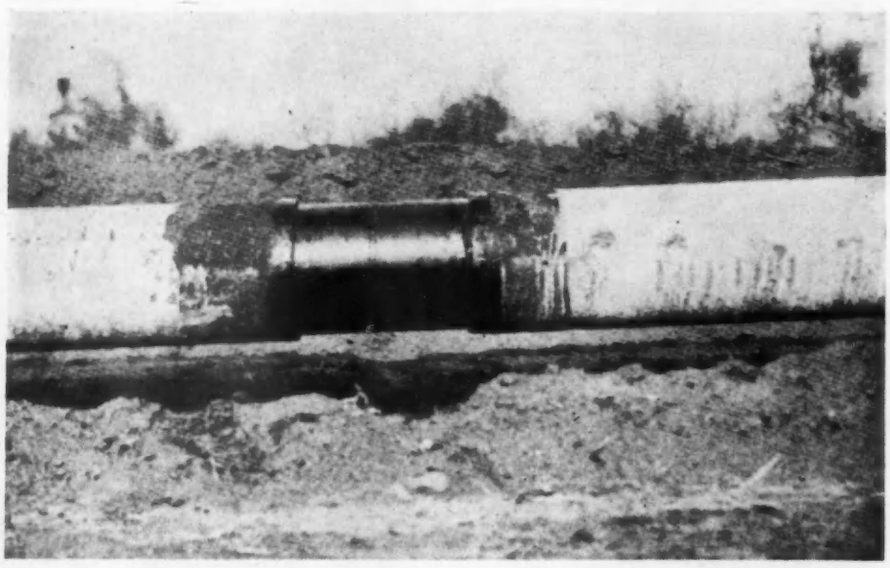
STANDARD Oil Company of California is laying 96 miles of 12-inch pipe from the lower San Joaquin Valley to Estero Bay, near San Luis Obispo, California. The material being used has been dug up from an old line and reconditioned in a plant built especially for this purpose.

Practically all the pipe received at the plant was covered with the remains of protective coatings applied in previous years. The first step in the reclaiming operation was to pass the pipe through a furnace, where powerful gas torches, inserted inside the pipe, created a temperature up to 1100° F. This degree of heating is sufficient to remove all the old coatings and dirty scale, and to loosen the rust sufficiently to permit its easy removal with a sand-blasting machine.

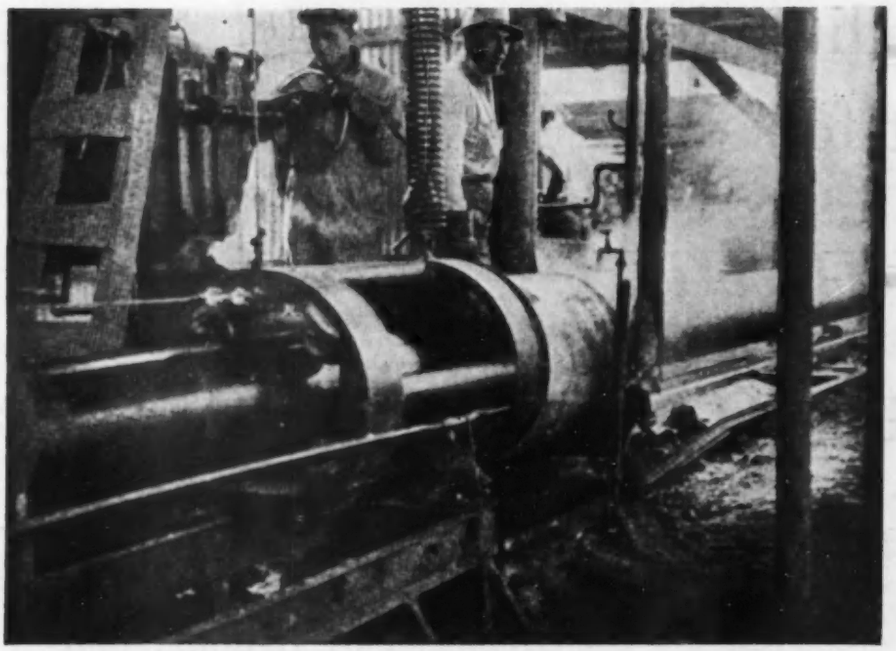
After leaving the burning oven the pipe was allowed to cool. Then men with cutting torches clamped their torch-guides on the ends of each joint and cut off the screw threads which were, of course, not needed on a welded line. The guide collar for holding the cutting torch was clamped to the pipe so as to hold the torch at the proper angle for beveling.

After beveling the pipe was rolled to a sorting table, where any pieces obviously unfit for future use were rejected. It then went through the sand-blasting machine, in which jets of steel grit were directed against all portions of the surface, exposing clean bare metal. At this point it was carefully inspected to eliminate any pieces that in their service had been seriously corroded. Those found suitable for use in the new line were marked with yellow chalk wherever localized corrosion or pitting had removed metal to any considerable depth. Welders then deposited new metal in the marked pit-holes, building the pipe up to its original thickness or more. During the welding operation the pipe was turned by electrically-driven rollers, permitting the welder to concentrate attention on the task of depositing metal quickly and effectively.

Next the joints, which average 20 feet in length as recovered from the old line, were welded together to form 40-foot sections. This could be done more efficiently in the yard, where



A pipe joint after priming; special forms are then put around the pipe and a hot protective coating applied to the joint.



A close-up view of the coating application nozzle, supported by a coil spring. Pipe moves spirally through the machine.

the pipe was turned by mechanically operated rollers, than by field welding. The 40-foot lengths were then turned over to a testing device, in which the ends were plugged and an internal air pressure of 110 pounds per square inch was applied to check the soundness of the welding work and to insure that no small pit-holes had been overlooked. After satisfactorily passing this rigorous test, the pipe was ready to go to those portions of the new right-of-way where the soil is relatively non-corrosive.

The exact nature of the soil along the entire route had been determined by making a complete soil analysis, including electrical resistance measurements. With such knowledge as a guide, Standard Oil Company of California lays bare pipe in the mild areas; where the tests show severe corrosivity a high grade protective coating is applied. Since the soil survey along the route of the Rio Bravo-Estero line had disclosed that some 30 miles lay in corrosive soils, an important part of the Kettleman Hills reclaiming plant was fitted with equipment for handling the coating material. All pipe to be treated was first given a priming coat of hot asphalt to insure a firm bond between the metal and the coating. During this operation a gas torch was inserted into the pipe to bring it to the proper temperature for insuring its bondness. The lengths were then pushed spirally through the coating machine's extrusion nozzle, in which the hot asphalt was squeezed against the surface under high pressure. Then the coated sections were given a coat of whitewash, which reflects the sun's rays. Pipe joints were not coated during this operation.

After the joints had been welded together into the line, portable equipment and special molds were provided to apply coating to the pipe joints in the field, following it being welded together.

Cutting off the old threaded pipe ends. The guide collar holds the cutting torch at the proper angle for beveling.

Kobe Hydraulic Power Unit located some distance from derrick.

Kobe Hydraulic Power Unit located on derrick floor.

ELIMINATES

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The Production Unit consists of an engine and a production pump, combined into a single unit and installed directly in the well. Stationary tubing replaces the reciprocating sucker rod string. The complete unit is an insert type, and is pulled dry with the pressure tubing.

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When Pipe Deterioration Became Noticeable On Ventura to Los Angeles Line, Industrial Fuel Supply Company Engineers Combatted it by Installing Units to Remove Condensate from Gas.

Internal Corrosion...

Mitigated on Gas Line By Dehydration Plant

JOHN C. ALBRIGHT

WHEN a natural gas compressor station was built near Ventura Avenue in 1928 by Ventura Fuel Company on its 16-inch 80-mile pipe line leading to Los Angeles, internal corrosion was not considered to be of sufficient importance to justify installation of any particular preventive or mitigating equipment. Ordinary testing apparatus did not show the presence of oxygen or hydrogen sulfide, although large quantities of water vapor soon were discovered to be condensed from the gas. Drips of sufficient capacity to drain the line were installed at important points, but it was not until 1931 that the first indication of pipe line deterioration became noticeable. Tests made shortly after this time, using the White method, showed that approximately 0.0077 grains of hydrogen sulfide per hundred cubic feet was present in the gas coming from the wells, and the oxygen content was found to be substantially less than 0.1 percent.

After the compressor station, transmission line and other equipment were acquired by Industrial Fuel Supply Company, badly pitted interior sections of pipe showed that with existing conditions continuing they would eventually result in replacement of extensive sections. It was known that varying percentages of oxygen from the air taken in with the gas through the gasoline plant vacuum gathering lines would cause deterioration of pipe when associated with quantities of condensed water vapor. This water not only afforded a fertile field in which minute quantities of corrosive sulfur compounds could cause severe pitting to occur, but also reduced the capacity of the pipe line considerably, due to the excessive drop in pressure when the drips became filled and were not blown regularly, which prevented the line from carrying the maximum load desired by the company. Consequently, it was decided to install a chilling process for dehumidifying the gas.

Existing plant equipment was taken into consideration so that no other units than those already installed would be necessary, except in a few instances. The pressure of the discharge during peak loads is around 450 pounds gauge, and the amount handled through the transmission line at this time runs in the neighborhood of 93,000,000 cubic feet, all which is handled by ten 750-horsepower double-acting gas engine-driven compressors. Each machine is equipped with a high- and low-pressure compressor, taking suction on the delivery lines from the natural gasoline plants at 30 pounds by a 21-inch diameter by 21-inch stroke cylinder. The gas is reduced in temperature through inter-stage coolers placed in a louvre tower, from which it is taken through the high-stage cylinders, 11¼ inches x 24 inches. The gas again is cooled by passing through other atmospheric sections, but due to the difficulties outlined above, the final temperature is reduced to only about 87 degrees Fahrenheit.

The quantities of water vapor contained in saturated natural gas at various pressures and temperatures are shown in the accompanying chart. To use this chart, the scales at the right and bottom should be used when the gas pressure exceeds 200 pounds, and for pressures below that figure, the scales at the left and top are employed. For example: How much water should be removed from a gas leaving a compressor station at 400 pounds pressure

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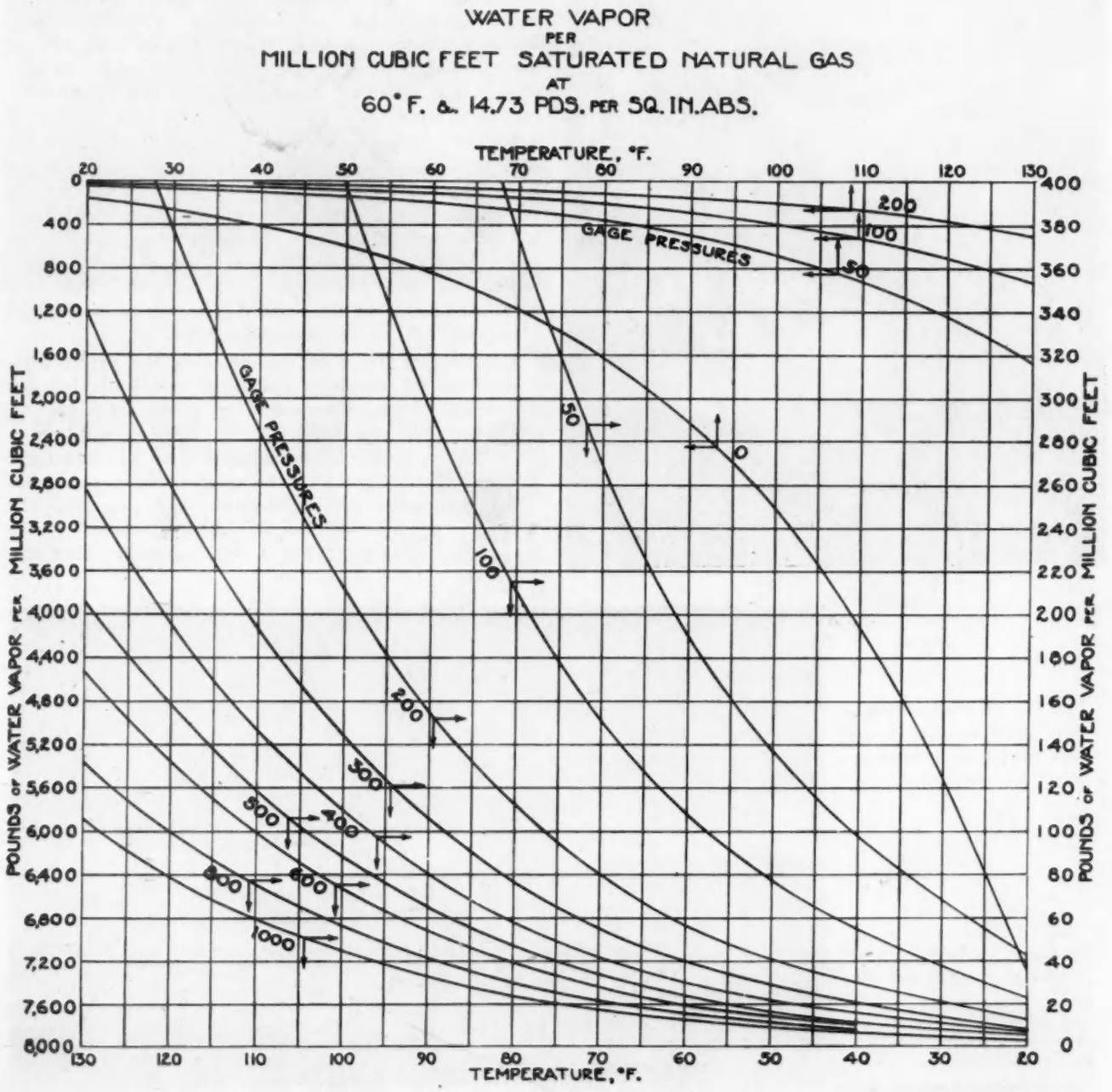
and at a temperature of 90 degrees Fahrenheit. By reference to the chart it may be seen readily that the water vapor content at 400 pounds and at 90 degrees is 80 pounds to the million cubic feet. If the gas is still under 400 pounds pressure and the temperature reduced to 50 degrees Fahrenheit, it will be seen that it contains 21 pounds per million cubic feet. The difference, or 59 pounds, is the amount of water that would be theoretically removed under these conditions.

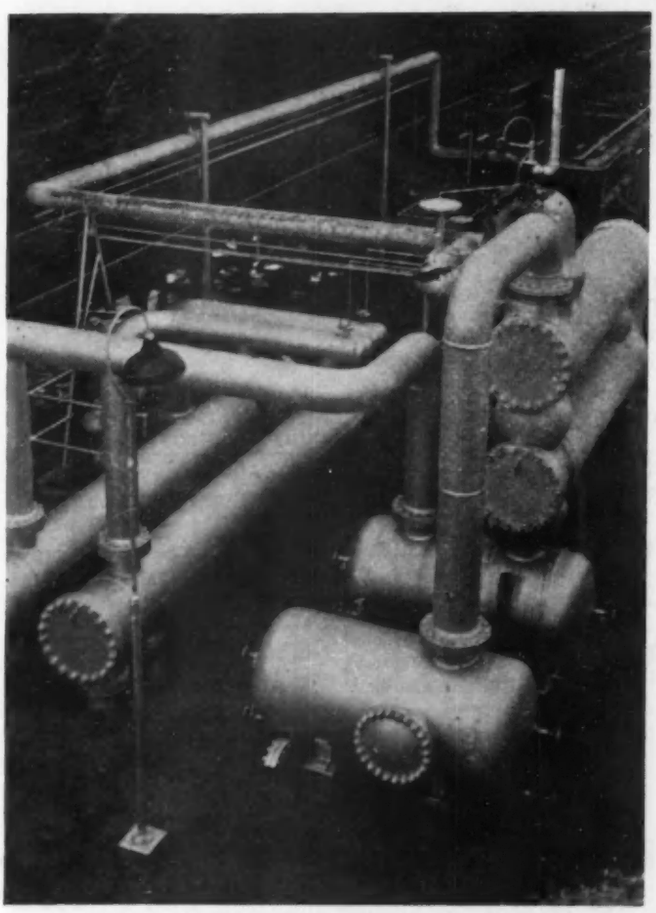
Ground temperatures taken along the line of Industrial Fuel Company during the winter season at frequent intervals have shown that the minimum temperature to which the pipe line and gas would be subjected to is about 55 degrees Fahrenheit. When the temperature is at that figure and above, no appreciable amount of water would be condensed from the vapors in the gas, and consequently would not cause any difficulty from that source. The pressure drop in the line between the initial station and the point of ultimate disposal is such that the average is considerably below 400 pounds, and the average ground temperature is well above the winter season minimum.

This ammonia refrigeration system placed in service to mitigate corrosion of the internal surfaces of the pipe line, and to prevent an excessive amount of water to accumulate in the sections of the line traversing the areas between the hills of the Santa Monica Mountains, consists of three principal sections: exchangers, scrubbers, and refrigeration or cooling elements. It is located near the main louvre tower, in which the interstage and final cooling sections are installed, on a plot of ground approximately 50 feet in width by 75 feet in length. This location was selected because it was near the transmission line, where it was connected to the outlet header of the final coolers. The line was cut to permit the necessary gates and connections to be placed in it so the refrigeration unit could operate on a by-pass instead of a straight-away flow along the pipe line.

Two shell and tube heavy-duty exchangers were set near



the main line so, with adequate piping, the gas flowing from the section of the main line passes through them in parallel. They have a working pressure of 500 pounds, and are set on low concrete piers, just above the surface of the ground. Gas flowing to them passes through the tubes of each in equal proportion and into buried piping, flanged to the outlet connection at the opposite ends. Two scrubbers, horizontal drums, were installed, one of which receives the gas and strips a part of the moisture from it before it enters the refrigeration units, or chillers. Twelve-inch piping connects the upper outlet of the primary scrubber to the head of one chiller section, which is superimposed upon the other; both of which are mounted upon concrete supports with sufficient height that the secondary scrubber is located below the second chiller section. As the gas is cooled, water from the vapor in the gas follows the flow through the chillers and enters the horizontal drum below where it is separated from the gas. Both drums are fitted with filter elements to assist in removing the entrained condensate travelling through with the gas.



An 80-horsepower gas engine fitted with a special high-pressure cylinder designed for ammounia service, was installed in the auxiliary room. A complete circuit is used for ammonia service, including suction and discharge lines and a section of atmospheric coolers placed in the main louvre tower through which the ammonia vapors pass to be liquefied. The sections of this cooler contain steel tubes, which have been sherodized. The condensate leaving the cooler sections passes to a receiving drum near the chillers from which it is constantly fed to the shells of the two units through an automatic expansion valve. This valve, operated through remote control by a controlling recording instrument, is set so that a sufficient amount of ammonia liquid is fed to the chillers to maintain a temperature of 54 degrees on the gas leaving the tubes.

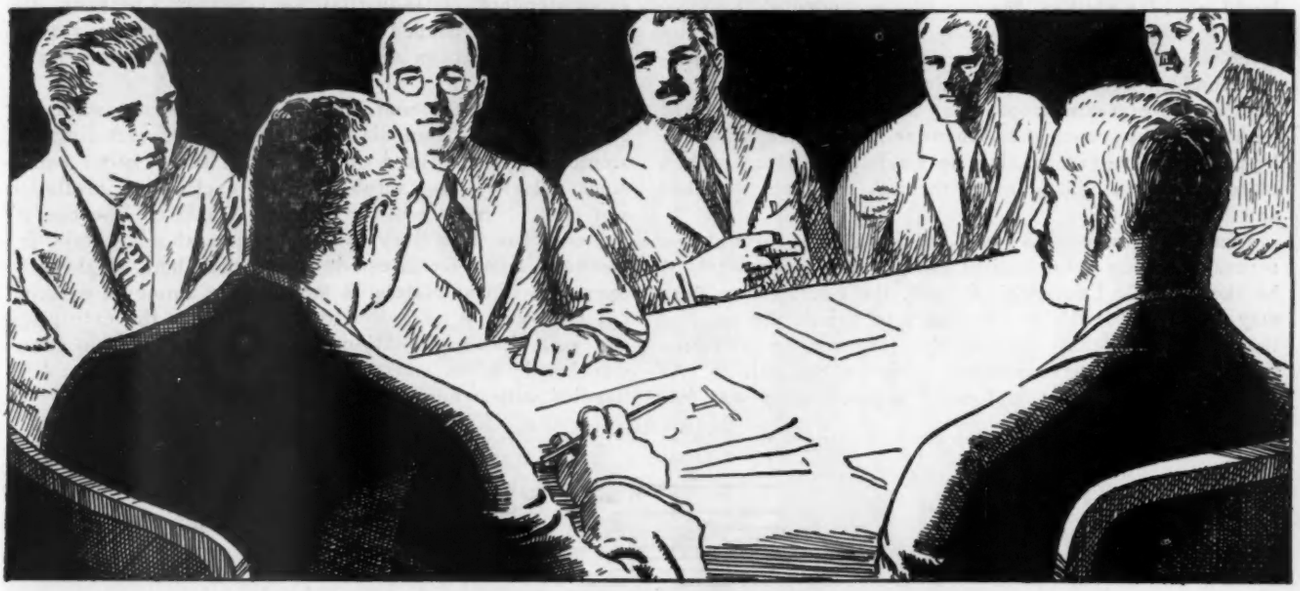
The two high-pressure exchangers, set near the line, were placed for the purpose of handling the gas in counter flow. The warm gas from the final coolers in the louvre tower passing in counter current flow to the gas leaving the secondary scrubber after being chilled to the temperature of 54 degrees Fahrenheit, warms the gas to well above the chilling temperature, and at the same time absorbs a sufficient amount of the reduced temperature so the load placed upon the chillers may be reduced.

The temperature of 54 degrees while the gas is compressed to 450 pounds is considered sufficiently low because "ice" has been known to form where liquid water exists when the gas is above normal freezing temperature. This "ice" is believed, by engineers interested and those conducting investigations, to be a butane cryohydrate, usually formed at low temperatures and high pressures. The formation of this "ice" has not been detrimental to the operation of this plant, but it occasionally has been sus-

Above: View of dehydration plant showing piping and equipment arrangement

Right: Compressor room, showing nine of ten 750-horsepower compressors

"Gentlemen . . . now you know the Specifications . . . WHICH VALVE SHALL WE BUY?"



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DARLING GATE VALVES

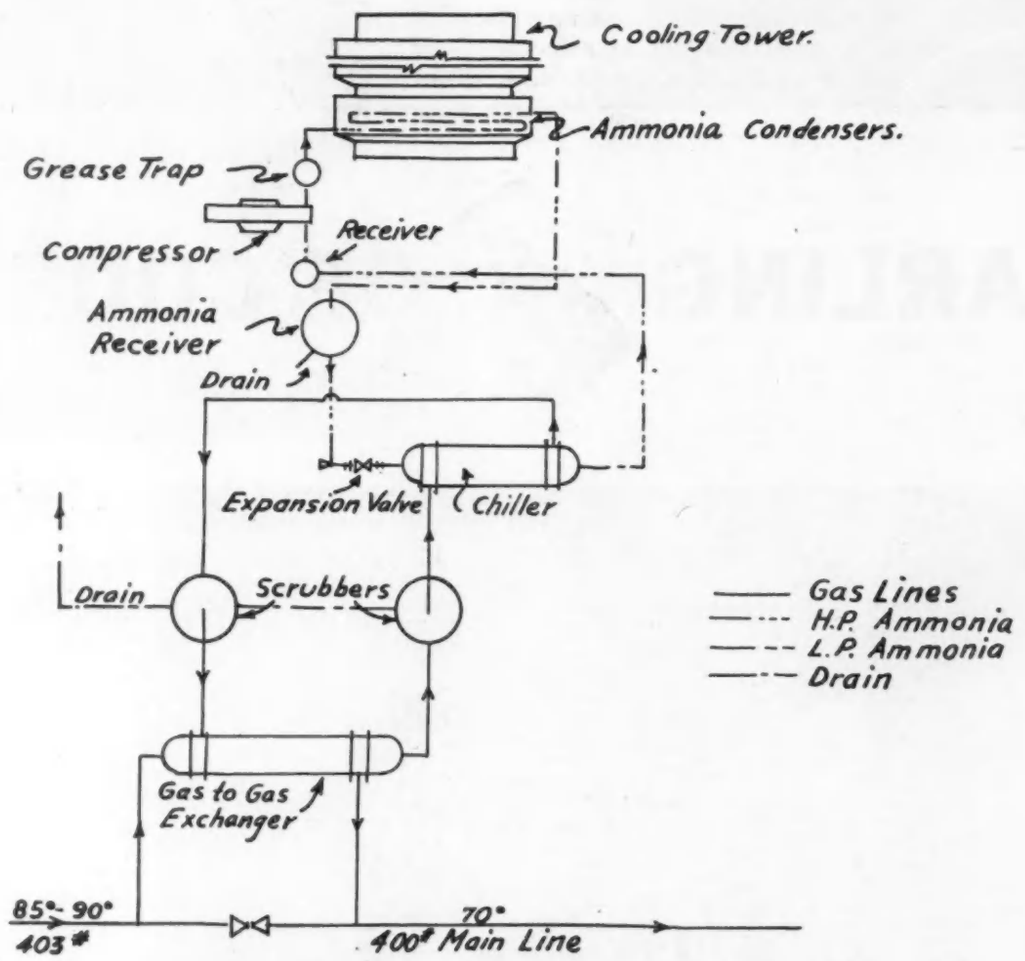
pected of accumulating as a slushy formation on the filter elements in the secondary scrubber.

An automatic by-pass valve was placed on a connection across the two lines, one leaving and the other entering the main line, so as to control the amount of pressure drop through the refrigeration unit. The normal drop through the exchangers, chillers and scrubbers is three pounds, and the by-pass valve it set to operate when the drop has increased to four pounds. The valve is controlled through remote connections, operated by a pressure controlling recording instrument placed on the instrument board near the chillers. Because of the tendency of gas to form ice and obstruct the flow through the chillers and scrubber drums, this valve was put in the by-pass to prevent undue pressure accumulating. The instrument controlling the pressure drop across the chillers also is fitted with an alarm system that functions at the same time the by-pass valve opens, ringing an electrically operated bell placed in the auxiliary room through adequate switches and wiring.

When this condition is found to exist, either through the processing of an extra load of gas through the chillers, or by the possible formation of "ice", the operator on duty may either adjust the by-pass valve to handle the load, or the instrument that controls the amount of ammonia passing through the expansion valve to the chillers. As the refrigeration plant is located approximately 400 feet from the auxiliary room, the operators do not visit it excepting at times necessary because of increased load.

The incoming gas from the final cooler headers, enters the two heat exchangers, gas to gas, at 87 degrees Fahrenheit where it is cooled to 72 degrees. Leaving the secondary scrubber after passing through the chillers, the temperature has been reduced to 54 degrees. The cold gas travelling back through the gas to gas exchangers is warmed by the incoming gas to 75 degrees, sufficiently high that it is well above the temperature encountered in the transmission line. According to C. S. Pool, general superintendent of Industrial Fuel Supply Company, the apparatus has stripped the gas of water vapor to a point where the formation of any condensate in the line is prevented.

The cost of this unit, exclusive of cooling towers and gas engine for ammonia compression, but including the ammonia cylinder used on it, as well as all other equipment, valves, piping, scrubbers, heat exchangers, insulation and control instruments, was about $24,000.00 The operating cost has been very low, averaging about ¼ mill per thousand cubic feet treated. While the plant has been in operation approximately 18 months, the ammonia make-up has been almost negligible, due, perhaps to the care given the unit during operation, and because all connections were made when constructed so that ammonia could be handled with a minimum amount of leakage.



Diagramatic sketch of Industrial Fuel Company's chilling plant

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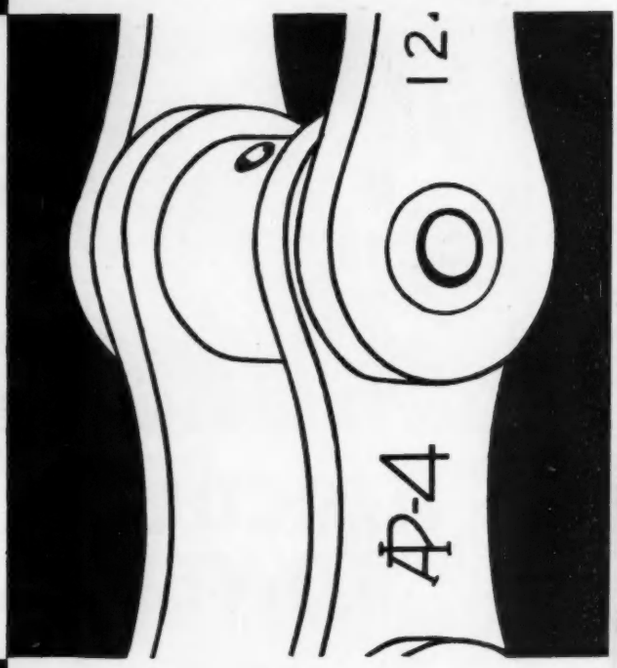

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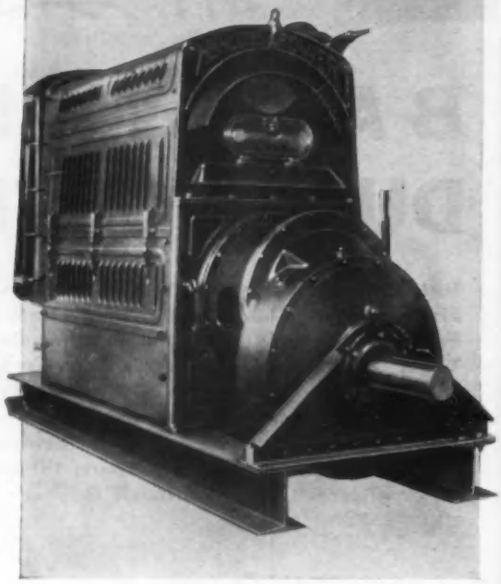

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Development of Manganese-Molybdenum Steel *for* Valves and Fittings for the Oil Industry

A. C. GREGG
Metallurgist, Kerotest Manufacturing Company

THE material and workmanship used in the manufacture of valves and fittings for the oil industry have been steadily and continuously improved during the past 15 to 20 years. The development work underlying this improvement was undertaken by valve manufacturers in response to the increasingly exacting demands made by the users of valves, which in turn was a result of the growing severity of the service. As deeper and still deeper wells have been drilled and working pressures have been constantly getting higher, there has been a necessary evolution of the material used for valves from cast iron to semi-steel; from semi-steel to cast steel, and finally from cast steel to alloy steel.

About 15 years ago the first large cast steel valve was made for oil field service. Prior to that time cast iron and semi-steel were the materials commonly used. This valve was to 12 inch size, weighed 2400 pounds, and was tested at 4000 pounds pressure per square inch. It replaced a 12-inch cast iron valve which weighed 8000 pounds and which was subjected to a test pressure of only 2500 pounds per square inch. During the early days of the steel valve, the only specification was that it be made of cast steel. This is interesting when compared with the intricate and exacting requirements for steel valves of the present day.

The replacement of cast iron by cast steel was a logical development, because of the possibility offered by steel for a great reduction in weight accompanied by increased strength and especially by increased toughness and resistance to shock. Other, and by no means insignificant factors were the increased safety to workmen afforded by the use of steel, and the fact that in case of fire the danger of cracked and ruined equipment was materially minimized.

The ductility of cast iron and of its near relative semi-steel is almost nil. The strength and shock resistance of both metals are very low. Ordinary cast steel, even in the "as-cast" condition, has three to four times the tensile strength of cast iron, and twice that of semi-steel of 15 years ago. It has 15 to 20 times the shock resistance of either metal.

The physical properties and structures of .30 carbon

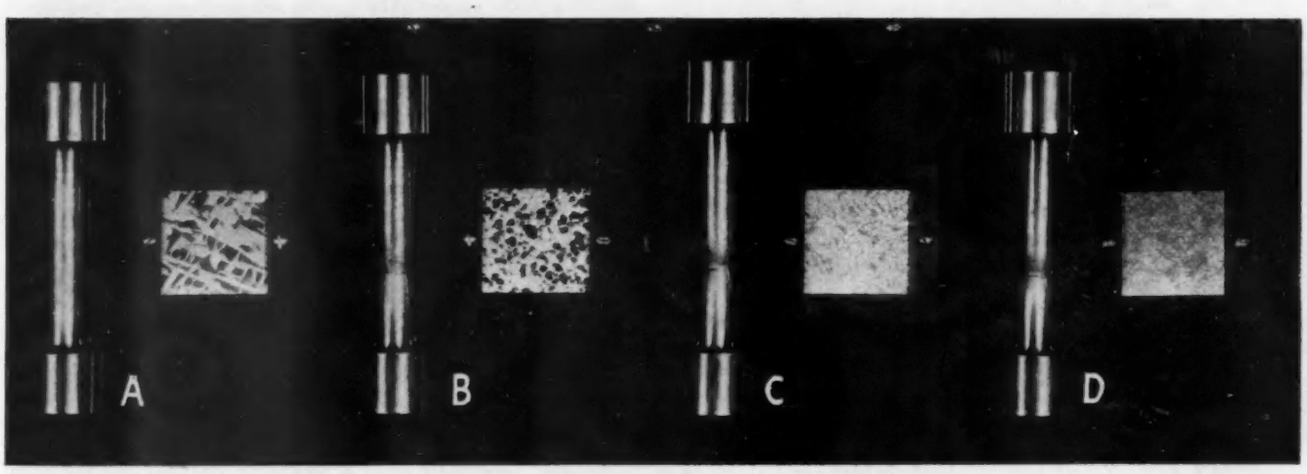

FIGURE 1

A.—AS CAST		B.—ANNEALED		C.—NORMALIZED & TEMPERED		D.—QUENCHED & TEMPERED	
Tensile Strength—lbs./sq. in.	75,000	Tensile Strength—lbs./sq. in.	76,400	Tensile Strength—lbs./sq. in.	73,650	Tensile Strength—lbs./sq. in.	84,750
Yield Point—lbs./sq. in.	38,800	Yield Point—lbs./sq. in.	43,600	Yield Point—lbs./sq. in.	43,700	Yield Point—lbs./sq. in.	60,850
Elongation—Percent	22.5	Elongation—Per cent	26.0	Elongation—Percent	31.5	Elongation—Percent	26.5
Reduction of Area—Percent	26.1	Reduction of Area—Percent	46.0	Reduction of Area—Percent	62.0	Reduction of Area—Percent	60.0
Brinell	156	Brinell	143	Brinell	143	Brinell	180
Impact—Izod, Ft. Lbs.	17.0	Impact—Izod, Ft. Lbs.	21.0	Impact—Izod. Ft. Lbs.	34.1	Impact—Izod, Ft. Lbs.	41.0
Impact—Charpy, Ft. Lbs.	12.8	Impact—Charpy, Ft. Lbs.	16.5	Impact—Charpy, Ft. Lbs.	23.4	Impact, Charpy, Ft. Lbs.	26.0
Endurance Ratio	0.40	Endurance Ratio	0.44	Endurance Ratio	0.47	Endurance Ratio	0.50

PROPERTIES BY QUENCH AND TEMPER (Possible Range)—Tensile Strength—lbs./sq. in., 80,000 to 125,000; Yield Point—lbs./sq. in., 50,000 to 97,000; Elongation—Percent, 31.0 to 10.0; Reduction of Area—Percent, 65.0 to 18.0; Brinell, 155 to 250; Impact—Izod—Ft. Lbs., 48.0 to 15.0; Impact—Charpy—Ft. Lbs., 30.0 to 9.0; Endurance Ratio, 0.50.

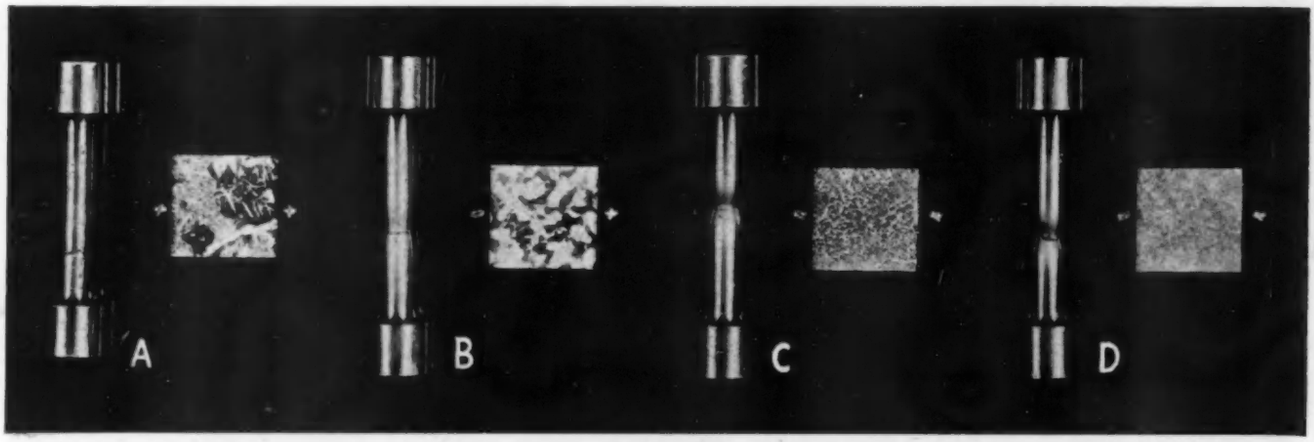

FIGURE 2

A.—AS CAST		B.—ANNEALED		C.—NORMALIZED & TEMPERED		D.—QUENCHED & TEMPERED	
Tensile Strength—lbs./sq in.	105,500	Tensile Strength—lbs./sq. in.	92,600	Tensile Strength—lbs./sq. in.	94,950	Tensile Strength—lbs./sq. in.	106,410
Yield Point—lbs./sq in.	68,150	Yield Point—lbs./sq. in.	53,900	Yield Point—lbs./sq. in.	60,300	Yield Point—lbs./sq. in.	85,780
Elongation—Percent	11.0	Elongation—Percent	27.0	Elongation—Percent	23.5	Elongation—Percent	22.6
Reduction of Area—Percent	11.9	Reduction of Area—Percent	45.8	Reduction of Area—Percent	52.8	Reduction of Area—Percent	54.6
Brinell	207	Brinell	170	Brinell	187	Brinell	203
Impact—Izod, Ft. Lbs.	12.0	Impact—Izod, Ft. Lbs.	18.0	Impact—Izod, Ft. Lbs.	42.6	Impact—Izod, Ft. Lbs.	54.0
Impact—Charpy, Ft. Lbs.	17.5	Impact—Charpy, Ft. Lbs.	17.8	Impact—Charpy, Ft. Lbs.	33.3	Impact—Charpy, Ft. Lbs.	37.0
Endurance Ratio	0.40	Endurance Ratio	0.44	Endurance Ratio	0.47	Endurance Ratio	0.53

PROPERTIES BY QUENCH AND TEMPER (Possible Range)—Tensile Strength—lbs./sq. in., 90,000 to 187,000; Yield Point—lbs./sq. in., 65,000 to 179,000; Elongation—Percent, 25.0 to 10.0; Reduction of Area—Percent, 58.9 to 25.0; Brinell, 183 to 430; Impact—Izod, Ft. Llbs., 59 to 3; Impact—Charpy, Ft. Lbs., 40 to 2; Endurance Ratio, 0.53.

cast steel are shown in Figure 1 in four typical conditions. A—"as-cast"; B—Fully annealed; C—Normalized and Tempered; and D—Quenched and Tempered.

A study of the figures for physical properties shows the following comparisons of interest.

Tensile Strength: The "as-cast" bar has a breaking strength of 75,000 pounds per square inch which is changed very little by either annealing or normalizing. The quenched and tempered bar shows a tensile strength of 84,750 pounds per square inch which is 13 percent higher than the "as-cast" specimen.

Yield Point: The yield point of the "as-cast" bar is 38,800 pounds per square inch. Both annealing and normalizing treatments increase this to approximately 43,500 pounds per square inch, which is a 12 percent improvement. The quenching and tempering treatment raises yield point to 60,850 pounds which is 57 percent better than the "as-cast" condition.

Elongation: The annealed and the quenched and tempered bars show an improvement over the 'as-cast'" condition of about 18 percent. The normalized bar is about 31 percent higher than the "as-cast."

Reduction of Area: This property is important as an indication of ductility. The annealed bar shows an improvement over the "as-cast" 75 percent. Both the normalized and the quenched and tempered bars have figures 134 percent higher than the "as-cast" and 30 percent higher than the annealed specimen.

Impact Test: Resistance to shock is determined by two well-known impact tests—Izod and Charpy. Both tests give the same information. These dynamic shock tests are probably the most interesting of all the tests made. For the "as-cast" bar the Izod test shows a resistance to shock of 17 foot-pounds. The annealed bar shows 21 foot-pounds which is an improvement of 23.5 percent. The normalized and tempered result is 34.1 foot-pounds or 100 percent better than the "as-cast" while the quenched and tempered bar shows a figure of 41 foot-pounds or 141 percent better. The quenched and tempered bar is 95 percent more shock resistant than the annealed.

Resistance to shock (or toughness) and high tensile strength are properties opposed to one another. The metallurgist is forever seeking the steel and the treatment which will produce the highest possible strength with the highest possible toughness. In selecting the steel for any given application, it is necessary to select the best possible compromise between toughness and strength to meet the particular application in question. If toughness be more important than strength or hardness, the treatment must be such as to produce a low Brinell figure. If hardness be the more important requirement, and the accompanying lack of toughness can be disregarded, the steel should be treated to produce a Brinell figure as high as possible.

Valve steel must have very high strength to withstand stretch, but it also is absolutely essential that it be tough and shock resistant to meet the sudden strains put upon it in service. The practical limits for hardness in a carbon steel valve lie between 150 and 180 on the Brinell scale. This represents a tensile strength between 75,000 and 90,000 pounds per square inch, (or say a mean of 82,000 to 84,000 pounds per square inch). With this tensile strength, carbon steel properly heat treated will show an Izod figure of 40 to 42 pounds foot.

It is easy to understand why cast steel replaced cast iron as the material used for high-pressure valves, but carbon cast steel with all its excellent combinations of properties does not satisfy all of the present day demands of valve users.

By the introduction of alloys, it is possible to produce steel having greater strength for a given ductility, or greater ductility for a given strength than is possible with the best made carbon steel. Also, as a rule, alloy steels have greater resistance to wear and abrasion.

There are five alloys in general use today for the production of Pearlitic and Sorbitic alloy steels, namely, Nickel, Molybdenum, Chromium, Vanadium and Manganese. The various combinations of these alloys make possible a surprisingly large number of alloy steels adaptable for castings.

The value of Molybdenum as an alloy for steel castings was not recognized prior to 1922. The first use of this ele-

"This RIDGID cutter rolls right thru any pipe I put 'er on"

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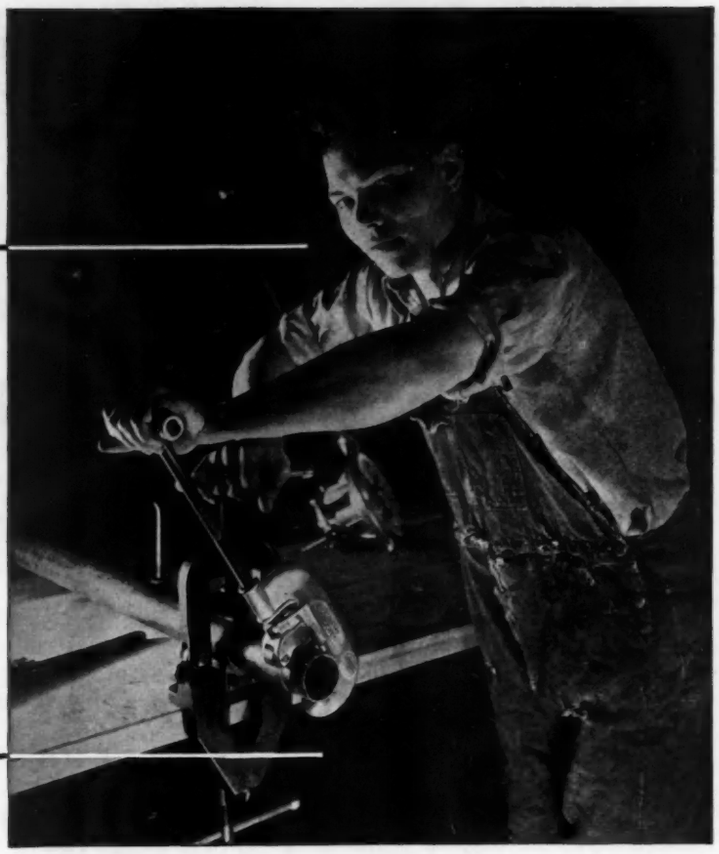

EASIER, quicker pipe cutting. This special RIDGID tool steel knife wheel rolls smoothly through any kind of pipe.

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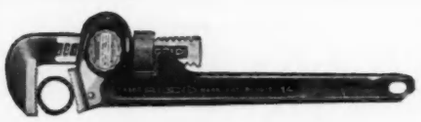
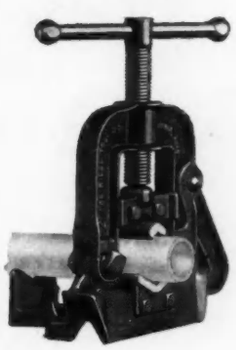
RIDGID PIPE TOOLS



RIDGID *All-Alloy, All Heavy-Duty Pipe Wrench,* Super-X metal unbreakable housing, jaws of chrome molybdenum alloy steel. And full of exclusive RIDGID features.

RIDGID *No. 65R Threader,* threads 4 sizes of pipe with one set of chasers, mechanical setting to pipe size, improved workholder. Ten threaders in complete line.



RIDGID *Pipe Vises,* special malleable frames, tool steel jaws. Seven yoke and chain vises in the line. All have pipe rests and benders. No-mar jaws in 2" and 2½" sizes.

PROTECT YOUR PIPE LINES

with power from the air

This new wind generator affords positive protection against electrolytic corrosion in low spots on your right-of-way. First cost is reasonable; installation cost is low; maintenance is practically nothing. It will pay you to investigate—results prove that installation eliminates pipe replacement. Write for full information.

Like the old-fashioned windjammer of the seas, this new device derives its power from the wind.

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TWENTY-FIVE YEARS EXPERIENCE

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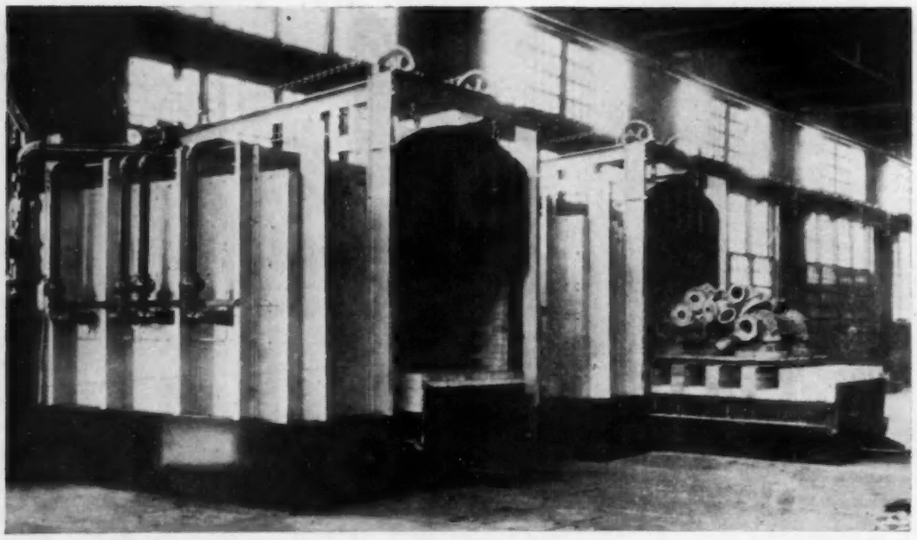


FIGURE 3

ment as an alloy for steel was in combination with tungsten and chromium in relatively large percentages, for the manufacture of high speed steel.

Molybdenum's valuable service in imparting impact resistance was recognized during the World War in the manufacture of steel for use in heavy field artillery. Modern high explosives demand the utmost in shock resistance of the steel used to manufacture guns, and Molybdenum Alloy steel (heat treated) has proved the best answer to this problem.

The application of Molybdenum as an alloy for steel valve castings was first made in January, 1922, and its analysis was Carbon .20, Molybdenum .27, Manganese .43. The castings and test bars were only annealed but showed sufficiently good physical properties to warrant further trials. Many heats with varying percentages of Carbon, Molybdenum and Manganese were then made and the result of this series of experiments was to standardize the combination now known as Manganese-Molybdenum or M.M. steel.

When the first heats of Molybdenum steel were made, annealing was the usual treatment for steel castings. Annealing at that time was not under the exact control that exists today because furnace and pyrometer equipment was vastly inferior to that now in use. Figure 3 illustrates the modern heat treating and annealing furnace in use today. Doors and cars are operated by push buttons, and temperatures are regulated by automatic recording control pyrometers. Furnaces are heavily insulated and the furnace atmospheres so regulated as to insure uniform heating

FIGURE 4
Cast Steel Structure

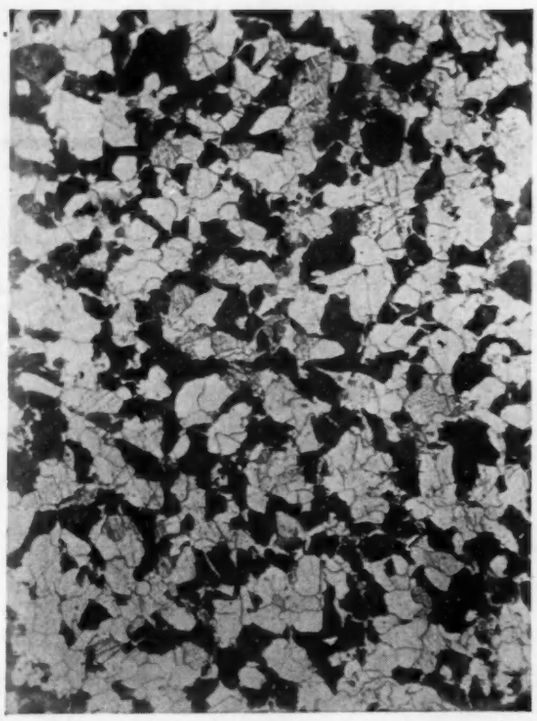


FIGURE 5
Annealed M. M. Steel

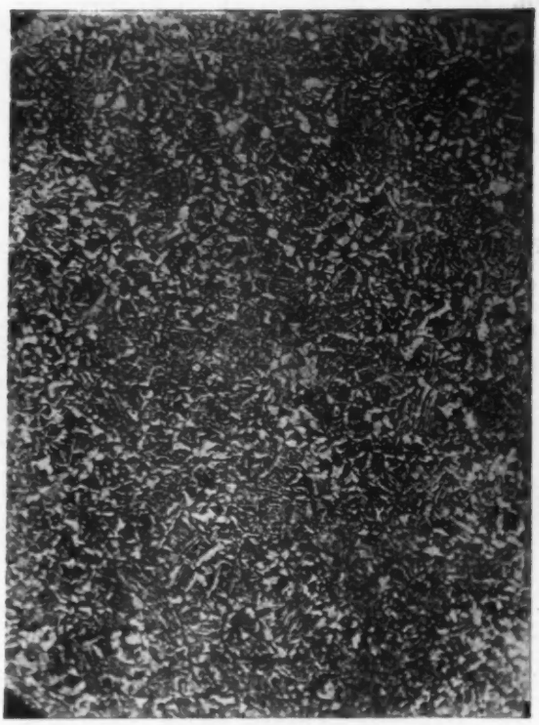


FIGURE 6
Normalized and Tempered

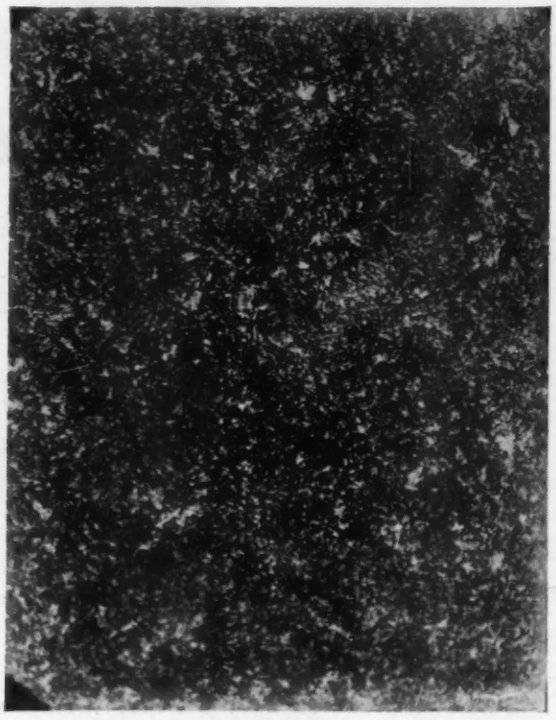


FIGURE 7
Special Heat Treatment

throughout the load. Handling the hot castings from furnace to quenching tank is accomplished by a crane carrying an automatic latch which permits the transfer with a minimum loss of temperature.

But annealing, however well performed, fails to produce the best combination of physical properties for Manganese-Molybdenum or any other Pearlitic alloy steel. Normalizing followed by a tempering treatment was the next improvement, and the physical results so produced are very much superior to those for annealed steel. However, as has already been shown in discussing carbon steel, the maximum combination of shock resistance and high tensile strength was arrived at only by full heat treatment. That is, by liquid quenching from a temperature just above the critical range, followed by a tempering or draw treatment just below this range.

Figure 2 shows the physical properties and structures of cast Manganese-Molybdenum steel in four typical states: A—"as-cast"; B—Annealed; C—Normalized and Tempered; D—Quenched and Tempered. Figures 4, 5, 6 and 7, illustrate better the Micro-structures and the progressive refinement in grain structure from "as-cast" to the annealed, to the normalized, and to the quenched and tempered state. The structure shown in Figure 7 is produced by a liquid quench followed by a tempering treatment at 1250 degrees Fahrenheit. The chart shown in

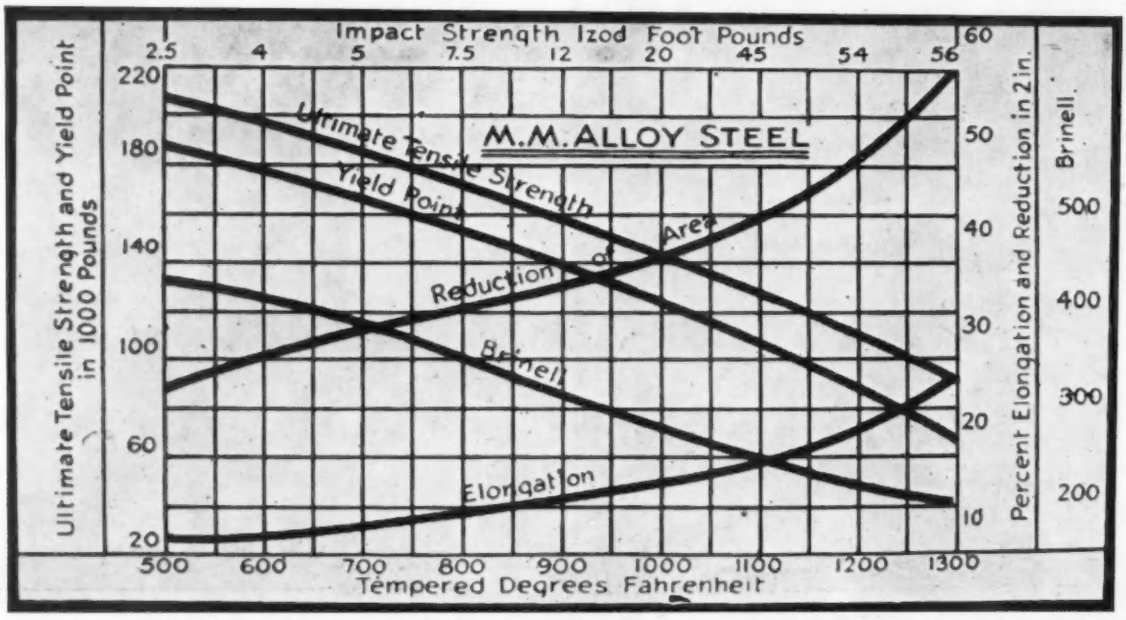
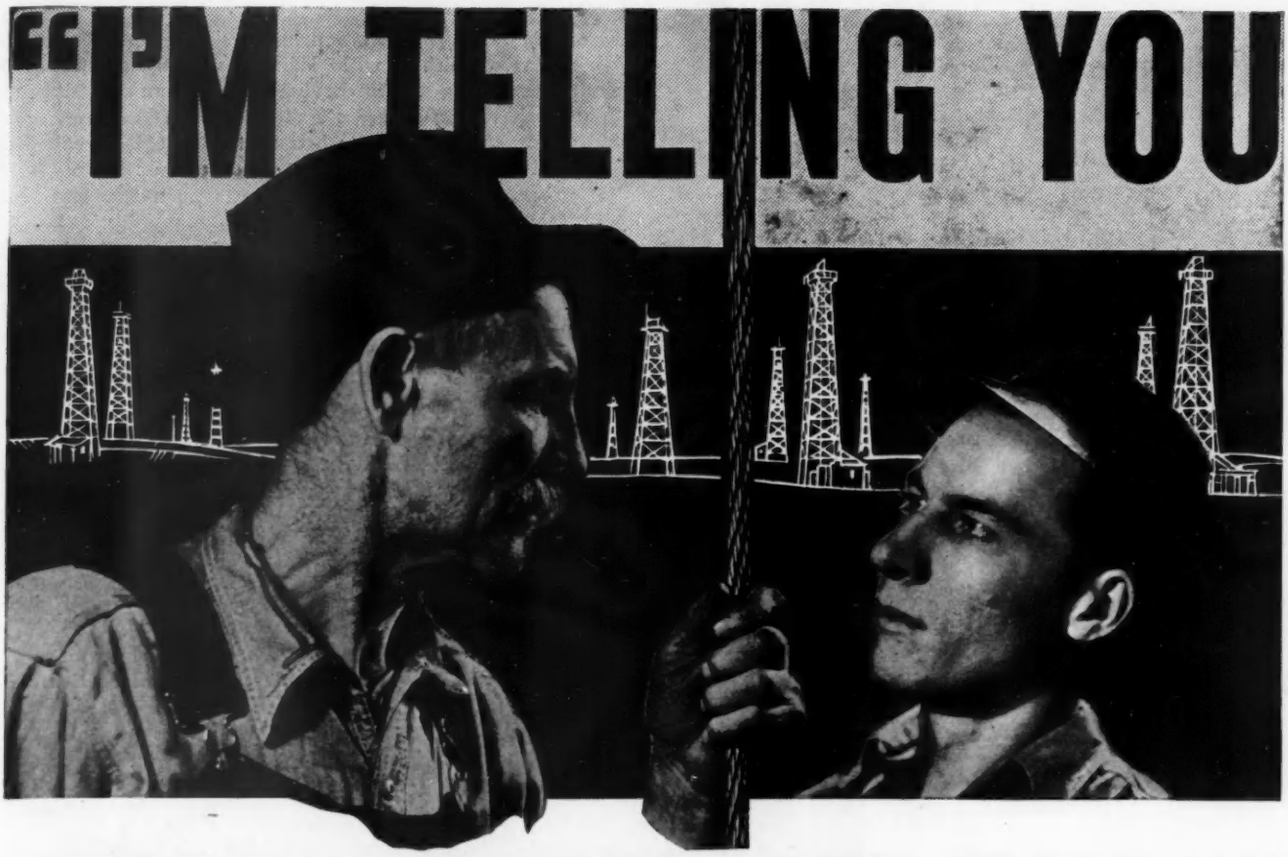


FIGURE 8
Chart showing physical properties of M. M. Steel

"I'M TELLING YOU



. . THAT IT COST ME A LOT TO LEARN ABOUT WIRE LINES"

"EXPERIENCE is priceless they say—and I'm telling you that it cost me a lot of time and money to learn about Wire Lines. I've tried about every brand there is, I guess, searching for low operating costs and for one source that I could depend upon to best meet every need for drilling and production. Like most other old-timers, I'm sticking as fast as glue to Tiger Brand Wire Lines—won't use anything else—because they never fail to come through smiling—to do better work at less cost. I'm telling you, also, that the service back of them is the best I ever experienced."

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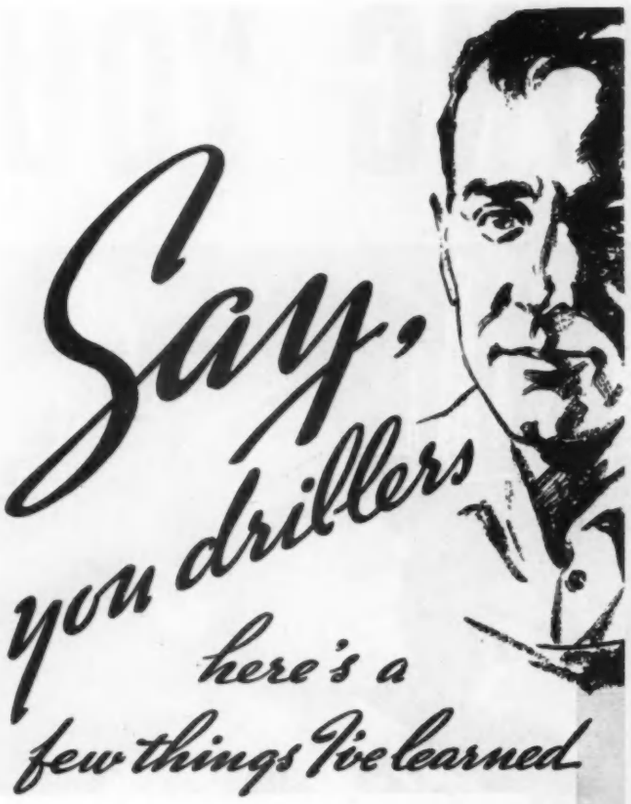

● I've learned that drilling isn't as hard in a lot of ways as it used to be . . .

● I've learned I can stick to the job of making hole without monkeying around with a lot of side jobs that the old style, cranky ropes used to hand me . . .

● These preformed lines we use nowadays have caught up with the rest of our equipment. They fit the job. All the trouble that used to be built into ropes seems to have been left out.

● I've learned that Tru-Lay Preformed Rotary Lines are the lines for me.

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Figure 8, shows the variation in physical properties which can be accomplished with Manganese-Molybdenum steel if the tempering treatment be varied from 500 degrees Fahrenheit to 1300 degrees Fahrenheit.

A study of the figures shown in Figure 2 reveals the superior properties of Manganese-Molybdenum steel, and the effects of various heat treatments upon structure and physical properties.

Tensile Strength: The "as-cast" bar has a tensile strength of 105,500 pounds per square inch. This is lowered 12 percent by annealing and 10 percent by normalizing but is increased to 106,400 pounds per square inch by quenching and tempering.

Yield Point: Yield point has greater importance than tensile strength when placing a valuation on the properties of a steel, because a steel which has been stressed beyond its yield point is ruined and fit for nothing but remelting.

The yield point of the "as-cast" bar is 68,150 pounds per square inch. This is lowered 21 percent by annealing and 11.5 percent by normalizing, but is increased to 85,780 pounds per square inch by quenching and tempering, or nearly 60 percent better than the annealed bar.

Elongation: Elongation in the "as-cast" M.M. bar is 11.0 percent which is increased to 27.0 percent by annealing, and shows 23.5 percent and 22.6 percent respectively in the normalized and the quenched and tempered bars.

Reduction of Area: The "as-cast" bar shows 11.9 percent reduction of area. Annealing increases this to 45.8 percent —normalizing to 52.8 percent—and quenching and tempering to 54.6 percent.

Impact Test: As was the case with carbon steel, the most gratifying and significant improvement accomplished by heat treating is revealed by the impact test results. In the "as-cast" condition M.M. steel shows only 12 foot-pounds by the Izod test. The annealed bar shows 18 foot-pounds which is a 50 percent improvement; the normalized bar shows 42.6 foot-pounds or 255 percent better than the "as-cast" bar; the quenched and tempered bar shows 54.0 foot-pounds of 350 percent improvement over the "as-cast" bar, and 200 percent better than the annealed specimen.

The practical limits for hardness in alloy steel valves lie between 200 and 225 on the Brinell scale. This represents a tensile strength somewhere between 100,000 and 110,000 pounds per square inch. With tensile strength at this figure Manganese-Molybdenum steel heat treated has the unusually high figure of 54 foot-pounds Izod.

During the melting and refining operations, Molybdenum does not oxidize and consequently the Molybdenum content of a bath of metal can be controlled with certainty. This fact assures the proper percentage in the melt and in all parts of the castings.

The improvement in the material used for valves has gone hand in hand with improvements in workmanship in foundry and machine shop. Valve castings today must leave the foundry with a minimum of machine finish, and must be cleaned and ground until free of all adhering sand and surface defects. Cores must clean out castings leaving smooth perfect surfaces. Great ingenuity has been exercised and in the study of heating, gating, and chilling to produce valve castings which are free from shrinks and internal defects of all descriptions. Improvements in heat treating technique have been previously discussed.

In the machining of valves, jigs and fixtures are employed assuring inter-changeability of all valve parts. Machine operations are held to closer tolerance, which means better fits, and all machined surfaces must have finer finishes with removal of tool marks and better workmanship in all respects than the valve of yesterday.

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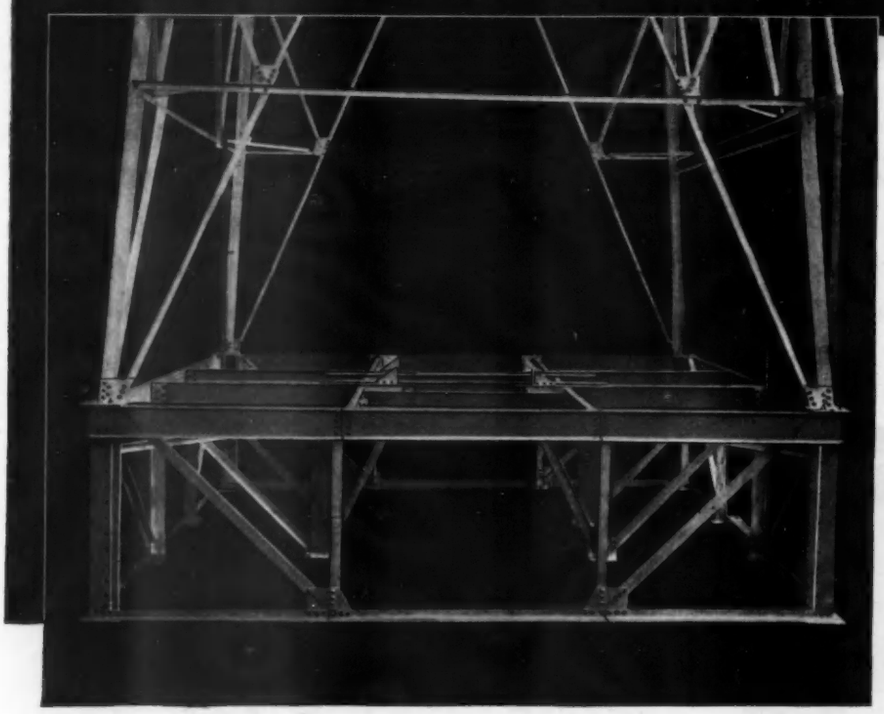

"The best damn Sub-Structure I ever saw. I can put it up with my eyes shut." This comment by a Texas rig builder rather forcefully, perhaps, but in no uncertain terms expresses the opinion of every man who buys, erects or works around a M.I.W. Sub-Structure. The driller on the same well said, "It's the best Sub-Structure I ever worked around that had plenty of room to work in without bumping my head frequently."

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Pipe in any length from ten feet to the limit of truck or rail carriers' transportation facilities is available.

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The use of Wyatt facilities can effect real economy and savings in reconditioning work on existing pipe lines. We offer the following items:

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WYATT METAL & BOILER WORKS
PLANTS AT DALLAS AND HOUSTON

Product Prices Continue Rising; Hope Grows for Higher Crude Postings

THE oil industry's markets have continued in their long-sustained march toward firmer and higher ground. Last week brought further gains, and there have been no adverse developments to prevent additional improvement.

For about a month the Pacific Coast region was out of step with the rest of the country, experiencing marketing difficulties that were reflected in wholesale and retail prices of petroleum products. But last week the markets of the area exhibited pronounced improvement, as new marketing agreements began to function. Service station postings were substantially higher than previously.

Following a week of interruption, the Mid-Continent wholesale gasoline market has resumed the upward movement that has been under way for more than two months. Gasoline tank car prices throughout the region were one eighth cent per gallon higher last week than in the previous week. Kerosene prices at the Mid-Continent refineries were also an eighth cent better than in the preceding week.

The strong tank car market of the Mid-Continent continues to be accompanied by favorable service station postings throughout the region east of the Rocky Mountains.

Crude Market Strong

Markets for crude oil are particularly firm, in consequence of the relatively high prices available to refiners for finished products. Crude purchasers continue eager to connect with additional wells in some districts. These circumstances are naturally promoting hope among producers for improvement of crude oil prices. In their long and steady rise since about March 1, refinery prices have advanced into what is generally considered a practically "normal" relation to crude prices. If tank car prices rise materially higher, it will be possible under the oil code for the federal government to force payment of higher prices to the crude oil producers.

Code Requirement on Prices

In the code there is a provision making it mandatory for crude purchasers to pay prices at least high enough to conform with a specified relationship to wholesale gasoline prices, when state proration allowables are adhered to. It is provided that the price of 36 gravity Mid-Continent crude must be at least 18.5 times as great as the average tank car price per gallon for 60-64 octane U. S. motor gasoline in the Group Three (Oklahoma) area. (In August, 1934, the 60-64 octane classification was changed to 63-70 octane). With this ratio as the basis, and differentials applying for higher or lower gravities, minimum crude prices are thus prescribed. The relationship represents the average that prevailed in the 1928-1932 five year period.

On the basis of that formula, the present price of $1 a barrel for 36 gravity Mid-Continent crude would not have to be raised until after increase of the average price of 63-70 octane Oklahoma gasoline above 5.40 cents a gallon. That gasoline price level has almost been reached, however, the present average Group Three price for 63-70 octane material being 5.25 cents. (The corresponding average price for 1934 was 4.58 cents a gallon.)

East Texas Tank Car Shipments

Week Ending May 5, 1935

PRODUCTS	No Cars	Estimated Gallons
Gasoline	459	3,700,546
Fuel Oil	189	1,837,572
Casinghead Gasoline	135	1,156,434
Distillate	61	490,564
Kerosene	48	402,174
Gas Oil	25	205,793
Topped Crude	18	179,488
Residuum	4	32,555
Naphtha	3	24,570
Total	942	8,029,696
Total Previous Week	1,091	9,272,535
Interstate	469	.....
Intrastate	253	.....
Coastwise	220	.....
Total	942	.....

Market Fundamentally Strong

A healthy economic and statistical situation, with demand relatively high and supply balanced with the demand, is primarily responsible, apparently, for current favorable refinery prices. But also involved, perhaps, is the pressure that was recently exerted for a more normal ratio of product prices to the existing crude prices. Independent refiners, in particular, were urging the federal government to promote lowering of crude prices or else raising of product prices, so they might convert losses on their operations into profits. Major companies have subsequently exerted their influence, through heavy gasoline purchases, toward strengthening of the tank car market. Considering that the refinery prices have by now been boosted practically to the code-prescribed relationship to crude prices, however, there arises some doubt as to whether the large companies will continue to encourage higher tank car quotations, at least for a while.

Political Influence on Markets

With Congress still in session, and the threat of new, restrictive legislation therefore still present, the political influence will quite likely enter perceptibly into any decision regarding the raising of the long-established crude prices. Before any company would take the initiative in revising crude

WELDED PIPE *to your own specifications*

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For Reconditioning Work on Pipe Lines

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Total	942	8,029,696
Total Previous Week	1,091	9,272,535
Interstate	469	.....
Intrastate	253	.....
Coastwise	220	.....
Total	942	.....

prices upward, it would obviously deliberate thoroughly as to the effect the action might have on the political situation. Raising of crude prices and further important advance of product prices might, for instance, have the effect of encouraging legislation to regulate oil prices or the profits of oil companies.

It is quite conceivable, therefore, that there will be no tampering with crude prices so long as Congress is in session. And since product prices can not rise much higher without necessitating crude price increases under the code formula, it would not be surprising to see the larger companies begin shortly to exert influence against the upward movement of the product prices, through withdrawal of support from the tank car market. It is generally conceded that in the past two years the oil companies in various crises declined to cut crude prices despite economic conditions warranting reductions, because of the fear of political complications. Similarly, they may be reluctant to raise crude prices, preferring to leave well enough alone.

Gasoline tank car prices prevailing at East Texas refineries continue within one-eighth cent of the Group Three (Oklahoma) prices, on all grades. In all those areas prices at the middle of the past week were up one-eighth cent per gallon above the levels of the previous week. The new prices for U. S. motor gasoline in North Texas and East Texas were as follows: third grade, below 62 octane, 4½ cents a gallon; standard grade, 62-67 octane, 5 cents; and premium grade, 68-70 octane, 5¼ cents. The Group Three (Oklahoma) prices, as stated, were one-eighth cent higher.

Prices approximating these prevailed for a brief period after adoption of the oil code in the fall of 1933, but at that time soon weakened, not to be restored until within recent weeks. Crude prices, however, remaining stabilized throughout that period at the levels now prevailing.

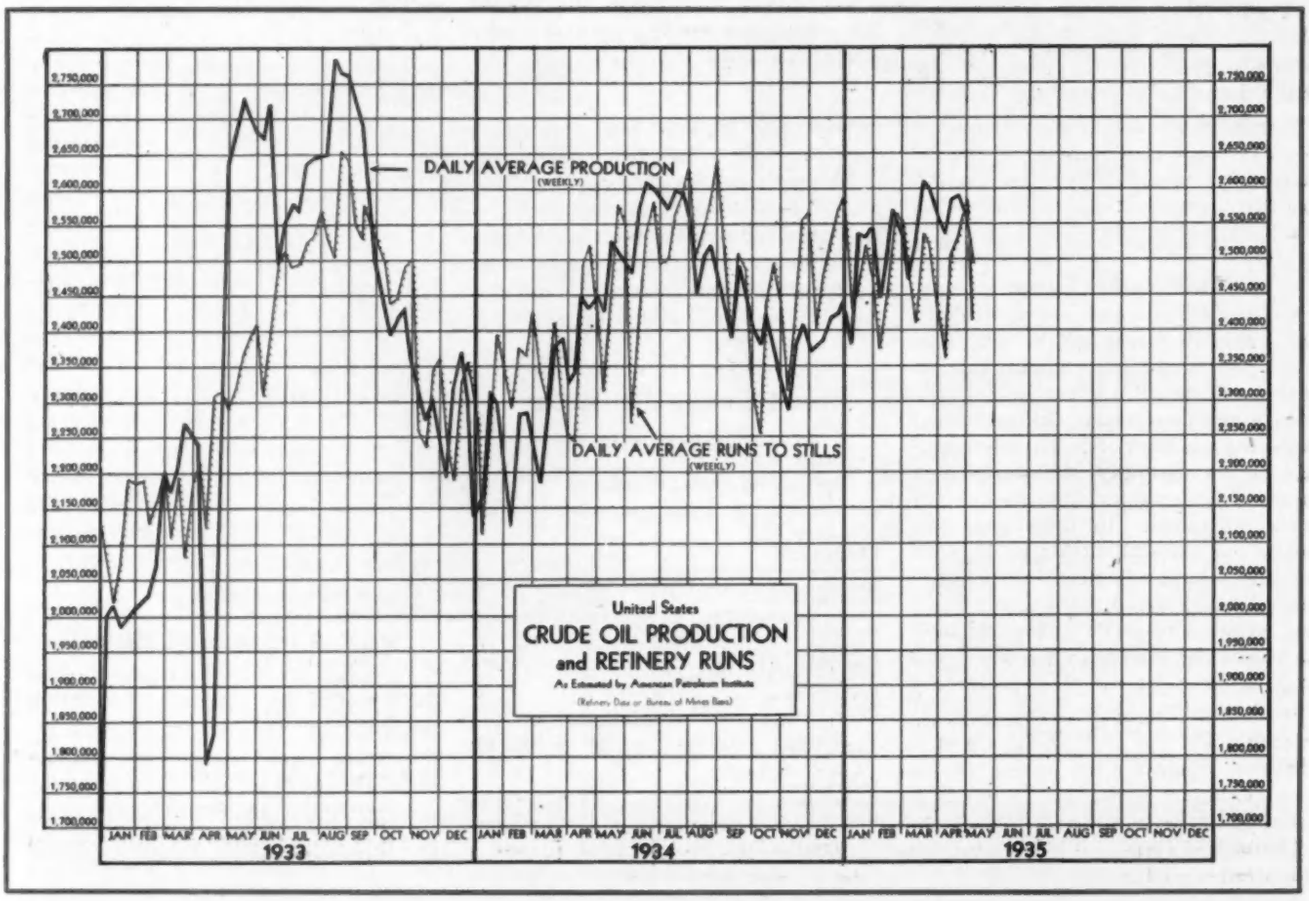
Kerosene prices last week at Mid-Continent refineries were one-eighth cent a gallon higher than in the previous week. In East Texas they averaged 3⅝ cents a gallon, in North Texas 3¾ cents, and in the Group Three (Oklahoma) region, 3⅞ cents. The kerosene demand was strong, and the offerings were scarce.

The market for natural gasoline in the Mid-Continent also was showing pronounced strength.

Contributing toward the firmness of the Mid-Continent markets was the continued effectiveness in controlling the East Texas field. Recent court decisions in favor of the regulatory authorities have tended, apparently, to bring some reduction in the producing and refining of hot oil. Various reports indicate the illegally produced oil is being turned out currently at rates of 25,000 to 30,000 barrels daily. Most of that is being marketed by trucks within Texas, at prices substantially below the quotations on tenderable material. Even in Texas, however, service station postings are being maintained at relatively favorable levels.

California Markets in General Are Improved

THE gasoline market in California during the past week showed a marked increase, as independent retail stations in large numbers reverted to the official retail gasoline price of 16 cents, the same price that is being charged by major companies for third grade. Small stations were noti-



fied by letter that no further deliveries would be made unless all cut price signs were removed. The notice in most instances had the desired effect.

Apparently all refiners and large marketers are in line with the new sales agency agreement. Only two independent refiners refused to sign up, although they agreed to obey all the new rules and regulations. Several refiners have failed to post the required $10,000 guarantee that they will obey all regulations, but this is not thought important, since the sales agency is buying surplus gasoline from the plants, and such plants have a credit at the agency which can be held if such action should be necessary.

The granting of a temporary federal injunction to prevent one producer and his affiliates from overproducing has improved the production situation until there is practically no hot crude to be had at any price. Production of crude in April according to early estimates, was below allowable in the state.

Natural gasoline is slightly stronger, due to shutting in several high gas-oil producers at Kettleman Hills and due to low production at Ventura Avenue. Prices for gasoline in tank cars is showing added strength, but prices have not been advanced.

Tanker shipments are holding up fairly well so far this year, and the strike of tanker employes apparently is fast dying. Tankers are moving with the aid of non-union crews.

Further Price Rise Expected in Oklahoma

IN the Group Three (Oklahoma) area, it was appearing late in the past week that demand for refined products would increase immediately, and that a further one-eighth cent a gallon rise in tank car prices might materialize.

During the week prices for third-grade U. S. motor gasoline, 62 and below octane, remained fairly steady at a low of 4½ cents a gallon. Contract shipments were steady, but seemed to amply satisfy most jobbers, even in the face of increased agricultural demand.

East Texas material was reported hard to obtain for northern delivery, and the market was tight at Oklahoma City, where only three refineries were in operation. Two of these running to about one half capacity, and the other about one third. Their third-grade spot market is about one-fourth cent higher than the remainder of Group Three territory.

Burning oils remained steady, even with the weather moderating.

Production Shows Usual Rise of Month Opening

UNITED STATES crude oil production last week (the week ending May 11) was 131,175 barrels per day higher than in the previous week. The sharp increase brought output to a level 62,575 barrels above the national allowable recommended by the federal government. In the previous week the production had been 67,100 barrels under the recommended allowable, with Oklahoma and California, two of the leading producing states, under their allocations by large margins. The new production rate for the country was 2,623,775 barrels daily.

The sharp rise of production last week compared with the previous week was due largely to precipitate gains for Oklahoma and California, in accordance with a customary monthly trend. In both states it is customary for production to spurt above the allocations early in the month, and then to drop off in compensation later in the month, falling under the allocations. The trend results from the application of proration, operators seeking the advantage of higher potentials in the fore part of the month.

Oklahoma's production rose last week to 522,825 barrels daily, a gain of 64,250 barrels over the previous week, and 22,625 barrels per day more than the 500,200-barrel per day May allowable.

California output increased to 513,500 barrels daily, from 454,000 barrels a day the previous week. The new rate was 19,300 barrels above the federal allocation to the state.

The Texas production of 1,030,600 barrels daily was about 2000 barrels less than for the previous week, and similarly below the federal allocation.

Louisiana showed a 4000 barrel in-

Texas Operator to Jail For Violating Court Order

Austin, Texas.—J. J. Juneman, East Texas oil operator, has been sentenced to 10 days in jail and a fine of $500 by Judge W. F. Robertson in the 126th District Court.

The defendant pleaded guilty on five of 51 counts charging violation of the terms of an injunction issued by the court forbidding the transportation of untendered oil from the Apex Refinery No. 1.

Juneman also agreed to run no more untendered oil from either of the two Apex plants.

This is the first case in Travis County in which an operator has been sentenced to jail for violation of any of the conservation laws.

United States Crude Oil Production

Estimates Compiled by THE OIL WEEKLY

District or State	Barrels Daily for Week Ending May 11	May 4
TEXAS —		
Texas Panhandle	55,800	61,500
North Texas	58,500	58,300
West Central Texas	23,400	23,400
West Texas	152,100	153,000
East Central Texas	49,300	49,100
*East Texas Field	449,200	445,800
South Texas	63,100	62,100
Texas Gulf Coast	179,200	179,500
*Total Texas	1,030,600	1,032,700
OKLAHOMA—		
Oklahoma City	175,150	116,150
Seminole Area	126,425	118,375
Tatums	5,100	5,000
Lucien	9,150	8,925
Fitts	10,225	14,075
Others	196,775	196,050
Total Oklahoma	522,825	458,575
KANSAS—		
Ritz-Canton	7,800	9,200
Voshell	4,650	4,550
Nikkel-Hollow	9,525	9,550
Sedgwick	9,800	8,450
Burrton-Haury	24,350	21,625
Others	89,725	91,350
Total Kansas	145,850	144,725
LOUISIANA—		
North Louisiana	23,100	22,500
Louisiana Gulf Coast	104,800	101,200
Total Louisiana	127,900	123,700
ARKANSAS	31,300	31,500
CALIFORNIA—		
Long Beach	70,500	56,000
Santa Fe Springs	38,500	37,000
Huntington Beach	42,500	35,000
Dominguez	20,500	19,500
Inglewood	11,500	9,500
Ventura Avenue	21,000	20,000
Seal Beach	8,000	7,000
Midway-Sunset	59,500	52,500
Elwood	10,000	11,000
Kettleman Hills	54,500	52,000
Mountain View	12,500	10,000
Playa del Rey	15,000	11,500
Others	149,500	133,000
Total California	513,500	454,000
MOUNTAIN STATES—		
Wyoming	34,800	34,500
Montana	10,900	10,500
Colorado	5,100	4,900
Total Rocky Mountain States	50,800	49,900
NEW MEXICO	51,100	50,600
EASTERN STATES	108,800	107,400
MICHIGAN	41,100	39,500
*Total United States	2,623,775	2,492,600
*Surreptitiously produced oil in East Texas, not included in above figures, estimated at	25,000	28,000
Grand total including surreptitiously produced	2,648,775	2,520,600

Crude Runs to Stills; Finished and Unfinished Gasoline; Gas and Fuel Oil Stocks; and Cracked Gasoline Production, Week Ended May 4, 1935

(Figures in thousands of barrels of 42 gallons each)

DISTRICT	Daily Refining Capacity of Plants			Crude Runs to Stills		Stocks of Finished Gasoline			(a) Stocks of Unfinished Gasoline	(b) Stocks of Other Motor Fuel	Stocks of Gas and Fuel Oil	Daily Charging Capacity of Cracking Units			Cracked Gasoline Production
	Potential Rate	Reporting		Daily Average	% Operated	At Refineries	Bulk Term., in Trans. & Pipe Lines	Total at Refys., Term., etc.				Potential Rate	Reporting		Daily Average
		Total	%										Total	%	
East Coast	612	612	100.0	414	67.6	6,364	9,901	16,265	985	255	9,134	534	469	87.8	74
Appalachian	154	146	94.8	86	58.9	1,201	875	2,076	327	125	707	79	78	98.7	18
Ind., Ill., Ky	442	424	95.9	320	75.5	6,435	2,944	9,379	718	50	4,186	349	338	96.8	110
Okla., Kans., Mo	453	384	84.8	235	61.2	3,333	2,140	5,473	675	395	3,953	256	228	89.1	65
Inland Texas	330	160	48.5	83	51.9	1,248	150	1,398	230	735	1,760	148	105	70.9	23
Texas Gulf	617	595	96.4	494	83.0	5,947	157	6,104	1,730	295	8,955	399	393	98.5	101
Louisiana Gulf	169	163	96.4	118	72.4	802	470	1,272	221	.....	3,101	77	74	96.1	13
North La.,—Ark.	80	72	90.0	41	56.9	188	86	274	36	190	313	46	44	95.7	6
Rocky Mountain	97	60	61.9	42	70.0	1,024	.....	1,024	109	50	767	46	39	84.8	14
California	852	789	92.6	434	55.0	8,240	1,517	9,757	946	2,805	63,802	274	274	100.0	53
TOTALS WEEK: May 4, 1935	3,806	3,405	89.5	2,267	66.6	34,782	18,240	53,022	5,977	4,900	96,678	2,208	2,042	92.5	477
April 27, 1935	3,795	3,409	89.8	2,429	71.3	*36,586	*18,356	*54,942	*5,948	4,800	96,787	1,953	1,868	95.6	476

Below are set out estimates of Crude Runs and Cracked Gasoline Production on B. of M. Basis for Week, May 4, 1935, compared with May 1934 Bureau figures.

Estimate B. of M. Basis, May 4, 1935	2,415		530
Estimate B. of M. Basis, April 27, 1935	2,580		530
U. S. B. of M., May 1934: Daily Average Crude Runs	2,460	U. S. B. of M., May 1934: Daily Average Cracked Prod.	487

(a) Amount of Unfinished Gasoline contained in Naphtha Distillates.
(b) Estimated. Includes Unblended Natural Gasoline at refineries and plants; also Blended Motor Fuel at plants.
(*) On new basis. Stocks as of April 27, comparable with subsequent weeks are: East Coast "At Refineries", 6,807,000 bbl.; "Bulk Terminals, etc.," 10,291,000 bbl.; "Unfinished", 805,000 bbl.—Appalachian "Unfinished", 326,000 bbl.

crease over the previous week, averaging 127,900 barrels daily, or about 15,000 barrels per day more than the federal allocation.

Kansas output averaged 145,850 barrels daily, which was 1125 barrels more than the previous week's rate, and 2550 barrels less than thhe federal quota.

The above figures do not include surreptitiously produced oil. Such production last week was indicated to be around 25,000 barrels daily, or a few thousand barrels per day less than in the preceding week.

Washington Says Crude Prices Right

Washington, D. C.—Conditions in the marketing industry are now such as practically to assure the maintenance of current crude prices, it was reported to Oil Administrator Harold L. Ickes this week by Paul Blazer, chairman of the petroleum code survey committee on small enterprises.

In the recent report of the committee it was recommended that if wholesale gasoline prices did not advance to an approximate parity with crude prices within about 30 days an immediate reduction should be made in the price of crude to bring about a parity with refined products.

A month after the submission of the report, it was explained, the Petroleum Administrative Board sought an informal opinion from the committee as to whether gasoline prices had advanced to an approximate parity with crude, obviating any immediate necessity for a reduction of the latter, as recommended.

The committee this week reported to the administrator informally that there now was no need for a reduction in crude oil prices, but pointed out that the committee, in reaching this conclusion, anticipated that small additional advances will be made in both tank car and retail gasoline prices.

The majority of the committee, it was stated, is of the opinion that another advance of at least one fourth-cent in tank car prices is essential, and that if such an advance does not occur within the near future a reduction of approximately five cents per barrel should be made in crude oil prices.

The committee is also of the opinion, it was stated, that the final answer to the question of maintenance of a parity between gasoline and crude prices, after it has been reached, will be determined by the effectiveness of efforts to balance crude supply and demand.

Generally the committee believes that fundamental conditions in the industry have been sufficiently improved to bring about and maintain prices for finished products which will justify $1 crude oil.

Comparison of Permits Granted for New Wells

STATE—	Week Ending May 4	Total this Mo.	Total this Year	Total this Date Last Year	1934 Year Total
Arkansas	2	2	53	15	100
California	17	17	302	167	629
Louisiana	22	22	299	267	799
Kansas	31	31	490	306	1,015
Michigan	18	18	149	157	460
Oklahoma	55	55	807	741	2,045
Texas	191	191	4,537	3,252	10,550
Total	336	336	6,637	4,905	15,598

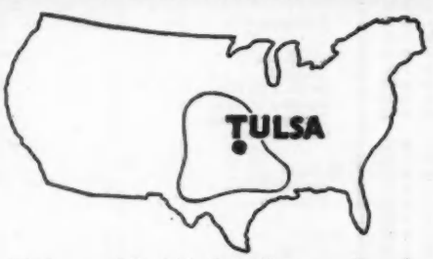
Tulsa's COMPLETE DOMINANCE

as the World-Center of

OIL PRODUCTION

1. 5% of World's Land Area
—but 64% of its Oil Production

2. Less than 1% of World's Land Area
but 40% of its Oil Production



3. Tulsa, with 644 Oil Companies, is
World Oil Production Headquarters

1. The United States represents 5% of the world's land area, but produces 64% of the world's oil. These are impressive figures.

2. The Mid-Continent represents less than 1% (0.7%) of the world's land area, but produces 40% of the world's oil. These figures are even MORE remarkable. In view of the basic world-importance of the Oil Industry, it is of tremendous economic significance that a single district comprising less than 1% of the world's land area should produce 40% of its oil supply.

3. Now—in this hot-bed of oil production, where does control head up?

* * *

The three lower maps answer this question. Tulsa has 644 companies engaged in one or more branches of the oil business. Of these, more than 40 rank as major oil companies. Tulsa thus has more oil companies than all other oil centers of the Mid-Continent combined. There is not a single producing area in the Mid-Continent, Gulf Coast, or Rocky Mountains, in which Tulsa oil companies are not operating, and in the most important sections, like East Texas and Seminole, a tremendous number of Tulsa oil companies are operating. In East Texas the number is approximately 50, in Seminole, 45. No other city in the Mid-Continent—or in the world—even approaches this showing.

Tulsa's growth as an oil production center continues steadily. Within the past few years Tulsa was selected as operating headquarters by the Consolidated (Sinclair-Prairie) Oil Corporation; the Stanolind Oil & Gas Company made Tulsa the headquarters of its various subsidiaries formerly located in Shreveport, Fort Worth and Casper; the Tidewater Oil Company moved its production headquarters from New York to Tulsa; and the Mid-Continent Division of the Shell Petroleum Corporation was centralized at Tulsa.

The fourth map shows Tulsa's central position with relation to the oil fields of the Mid-Continent, Gulf Coast and Rocky Mountains. The fifth map shows how Tulsa is the hub of the nation's great system of oil pipe lines. Much of the control of this great system is centered at Tulsa.

Equipment and supply purchases of Tulsa oil companies total several hundred million dollars, in a normal year. The manufacturer of oil equipment and supplies should consider the advantages of a Tulsa branch office or warehouse. For information about Tulsa address the Tulsa Chamber of Commerce.

TULSA

Oil Capital of the World

CRUDE OIL PRICE QUOTATIONS

(Figures Represent Basic or Flat Prices—Revised to May 10, 1935)

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Oklahoma-Kansas	23—$ .84	2¢	40—$1.08	9-20-33
N. and N.-C. Texas	28— .79	2¢	40— 1.03	9-20-33
Texas Panhandle				
Gray County	34— .79	2¢	40— .91	9-20-33
Carson-Hutchinson	34— .69	2¢	40— .81	9-20-33
West Texas				
Ector, Pecos, Wk'lr	*.75			9-20-33
Crane, Upton, Howard and Glasscock	*.70			9-20-33
East Texas	*1.00			9-20-33
Texas Gulf Coast				
Conroe	35— 1.09	2¢	40— 1.19	9-20-33
Tomball	*1.15			9-20-33
Cleveland	*1.00			1-11-34
†Goose Creek, Hull Liberty, Orange, Pierce Junction, Moss Bluff, Raccoon Bend, Sour Lake, Spindletop, Sugarland, West Columbia, Humble, Rabbs Ridge	Below 20— .82	2¢	34— 1.12	9-20-33
South and S.W. Texas	Below			
Refugio (Light)	20— .82	2¢	34— 1.12	9-20-33
Refugio (Heavy)	*.85			9-20-33
Saxet	*.85			9-20-33
Mirando	*.80			9-20-33
Pettus	*1.05			9-20-33
Salt Flat	*.87			9-20-33
Darst Creek	*.87			9-20-33
Arkansas				
El Dorado (Light) and Rainbow	29— .79	2¢	40— 1.03	3-17-34
El Dorado East Field and Smackover	*.70			9-20-33
North Louisiana	29— .79	2¢	40— 1.08	9-20-33
Urania	*.85-*.87			1- 1-34
SouthLouisiana	Below			
Lockport	20— .80	2¢	34— 1.10	9-20-33
Iowa, Cameron Mds.	Below 20— .70	2¢	34— 1.00	9-20-33
Rocky Mountain States				
Salt Creek	29— .84	2¢	40— 1.08	9-20-33
Elk Basin	*1.17			9-20-33

*All gravities—flat rate.
†Gulf Coast prices as posted by Humble Oil & Refining Company.

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Grass Creek (Light)	*1.17			9-20-33
Big Muddy	*$1.01			9-20-33
Rock Creek	*1.02			9-20-33
Sunburst	*1.35			9-20-33
Lance Creek	*1.02			8-25-33
Osage	*.62			8-25-33
Cat Creek	*.45			8-25-33
Pondera	*.65			8-25-33
Hog Back, N. M.	*1.00			9- 9-33
Lea County, N. M.	*.75			9-20-33
Mid-West States				
Lima	*1.15			9- 1-35
Illinois	*1.13			1- 5-34
Princeton	*1.13			1- 5-34
Western Kentucky	*1.06			5-26-34
California				
Signal Hill	14— .65	1¢	16— .66	9- 6-33
	17— .69	2¢	22— .84	9- 6-33
	23— .88	3¢	30— 1.09	9- 6-33
Seal B., Alamitos Hts.	19— .65	3¢	20— .68	9- 6-33
	21— .72	4¢	22— .76	9- 6-33
	23— .81	4¢	26— .93	9- 6-33
	27— .98	4¢	30— 1.10	9- 6-33
Huntington Beach	14— .65	4¢	15— .69	9- 6-33
	16— .72	3¢	19— .81	9- 6-33
	20— .83	3¢	28— 1.07	9- 6-33
	29— 1.09	3¢	30— 1.12	9- 6-33
Inglewood	14— .65	4¢	16— .73	9- 6-33
	17— .76	4¢	18— .80	9- 6-33
	19— .83	4¢	20— .87	9- 6-33
	21— .90	4¢	22— .94	9- 6-33
	23— .97	4¢	24— 1.01	9- 6-33
Playa del Rey	14— .65	1¢	15— .66	9- 6-33
	16— .69	4¢	17— .73	9- 6-33
	18— .76	4¢	19— .80	9- 6-33
	20— .83	4¢	21— .87	9- 6-33
	22— .90	4¢	22— .94	9- 6-33
	24— .97	3¢	25— 1.00	9- 6-33
			26— 1.04	9- 6-33
Olinda-Brea Canyon	14— .65	4¢	16— .73	9- 6-33
	17— .76	3¢	28— 1.10	9- 6-33
Athens-Rosecrans Dominguez	23— .83	3¢	24— .86	9- 6-33
	25— .90	4¢	26— .94	9- 6-33
	27— .97	3¢	29— 1.04	9- 6-33
	30— 1.08	4¢	31— 1.12	9- 6-33
			32— 1.15	9- 6-33
Elwood (fob ship)	33— 1.03	3¢	37— 1.15	9- 6-33
Torrance	14— .65	1¢	15— .66	9- 6-33
	16— .69	3¢	20— .81	9- 6-33
	21— .83	3¢	26— .96	9- 6-33

*All gravities—flat rate.

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Richfield	15—$ .65	2¢	16—$ .67	9- 6-33
	17— .70	4¢	20— .82	9- 6-33
	21— .85	4¢	22— .89	9- 6-33
	23— .93	4¢	24— .97	9- 6-33
	25— 1.00	4¢	27— 1.08	9- 6-33
	28— 1.11	4¢	29— 1.15	9- 6-33
Whittier-LaHabra	15— .65	3¢	18— .74	9- 6-33
	19— .78	3¢	24— .93	9- 6-33
Montebello	19— .65	1¢	20— .66	9- 6-33
	21— .69	3¢	22— .72	9- 6-33
	23— .76	4¢	24— .80	9- 6-33
	25— .85	4¢	26— .89	9- 6-33
Coyote Hills	15— .65	3¢	19— .74	9- 6-33
	20— .78	3¢	29— 1.05	9- 6-33
	30— 1.09	3¢	34— 1.21	9- 6-33
Santa Fe Springs	21— .72	4¢	22— .76	9- 6-33
	23— .79	4¢	25— .87	9- 6-33
	26— .90	4¢	28— .98	9- 6-33
	29— 1.01	4¢	30— 1.05	9- 6-33
	31— 1.08	4¢	33— 1.16	9- 6-33
	34— 1.19	4¢	35— 1.23	9- 6-33
	36— 1.26	4¢	38— 1.34	9- 6-33
New Hall, McKittrick, Kern River	14— .57		19— .57	9- 6-33
Midway-Sunset, Elk Hills, Buena Vista Hills	17— .57	4¢	18— .61	9- 6-33
	19— .64	3¢	22— .73	9- 6-33
	22— .77	4¢	32— 1.17	9- 6-33
Lost Hills	17— .57	4¢	21— .73	9- 6-33
	22— .76	3¢	30— 1.00	9- 6-33
Coalinga	17— .57	1¢	18— .58	9- 6-33
	19— .62	3¢	21— .68	9- 6-33
	23— .72	3¢	25— .81	9- 6-33
Wheeler Ridge	17— .57	1¢	18— .58	9- 6-33
	19— .61	3¢	25— .79	9- 6-33
Kettleman Hills	33— .93	3¢	39— 1.11	9- 3-33
Pennsylvania				
Bradford	*2.35			2- 4-35
Sw Pa. Pipe Line	*2.02			2- 4-35
Eureka Pipe Line	*1.97			2- 4-35
Buckeye Pipe Line	*1.87			2- 4-35
Corning Grade	*1.32			10- 2-33
Michigan				
Central Michigan	*1.20			9-30-33
Muskegon	*.70-1.00			12-31-32
Canada				
Petrolia	*2.10			9- 9-33
Oil Springs	*2.17			9- 9-33

*All gravities—flat rate.

Summary of Wells Completed in the United States

Week Ending May 4, 1935

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total Completions 1935	Total Completions this date 1934
Alabama	...	...	...	...	.....	3	1
Arkansas	2	1	...	1	10	66	22
California	22	19	...	3	12,840	258	117
Colorado	1	1	...	...	1,850	5	6
Illinois	...	...	...	...	.....	8	3
Indiana	...	...	...	...	.....	48	54
Kansas	42	33	3	6	30,520	479	288
Kentucky	8	5	1	2	200	48	30
Louisiana	18	12	2	4	4,815	256	246
Michigan	24	13	2	9	1,350	129	144
Mississippi	...	...	...	...	.....	7	11
Montana	...	...	...	...	.....	22	36
New Mexico	13	7	...	6	22,475	96	34
New York	...	...	...	...	.....	...	3
Ohio	35	4	20	11	20	490	301
Oklahoma	84	44	6	34	126,962	783	672
Pennsylvania	...	...	...	...	.....	51	133
Texas	250	191	1	58	804,170	4,004	3,241
Utah	...	...	...	...	.....	...	3
West Virginia	7	2	4	1	10	166	170
Wyoming	2	1	...	1	115	16	10
Total this week	508	333	39	136	1,005,237	6,936	5,531
Total last week	423	275	23	125	807,930	...	...
Total this year	6,937	4,556	606	1,775	13,045,437	...	...

MAJOR PRICE CHANGES

	Penns. (Nat. Tr.)	Mid-Cont. (36 Gr.)	Calif. (26 Gr.)
March 5, 1933	.....	.....	Cut 24.
May 2, 1933	.....	Cut 19.	.....
May 9, 1933	Cut 20.	.....	.....
May 23, 1933	Up 10.	.....	.....
June 19, 1933	Up 10.	Up 19.	.....
June 26, 1933	Up 10.	.....	Up 9-12
July 6, 1933	Up 13.	Up 10.	.....
July 17, 1933	Up 15.	.....	.....
July 28, 1933	Up 15.	.....	.....
August 11, 1933	Up 10.	.....	.....
August 24, 1933	.....	Up 10.	.....
August 30, 1933	Up 15.	.....	.....
September 6, 1933	Up 10.	Up 10.	Up 15.
September 8, 1933	.....	Up 15.	.....
May 1, 1934	Up 10.	.....	.....
November 6, 1934	Cut 25	.....	.....
December 6, 1934	Cut 25.	.....	.....
January 4, 1935	Up 15.	.....	.....
February 4, 1935	Up 15.	.....	.....

CRUDE PRODUCTION TAXES

Oklahoma—Three percent of gross value less royalty interest.

Texas—Two cents or 2 percent, whichever is higher.

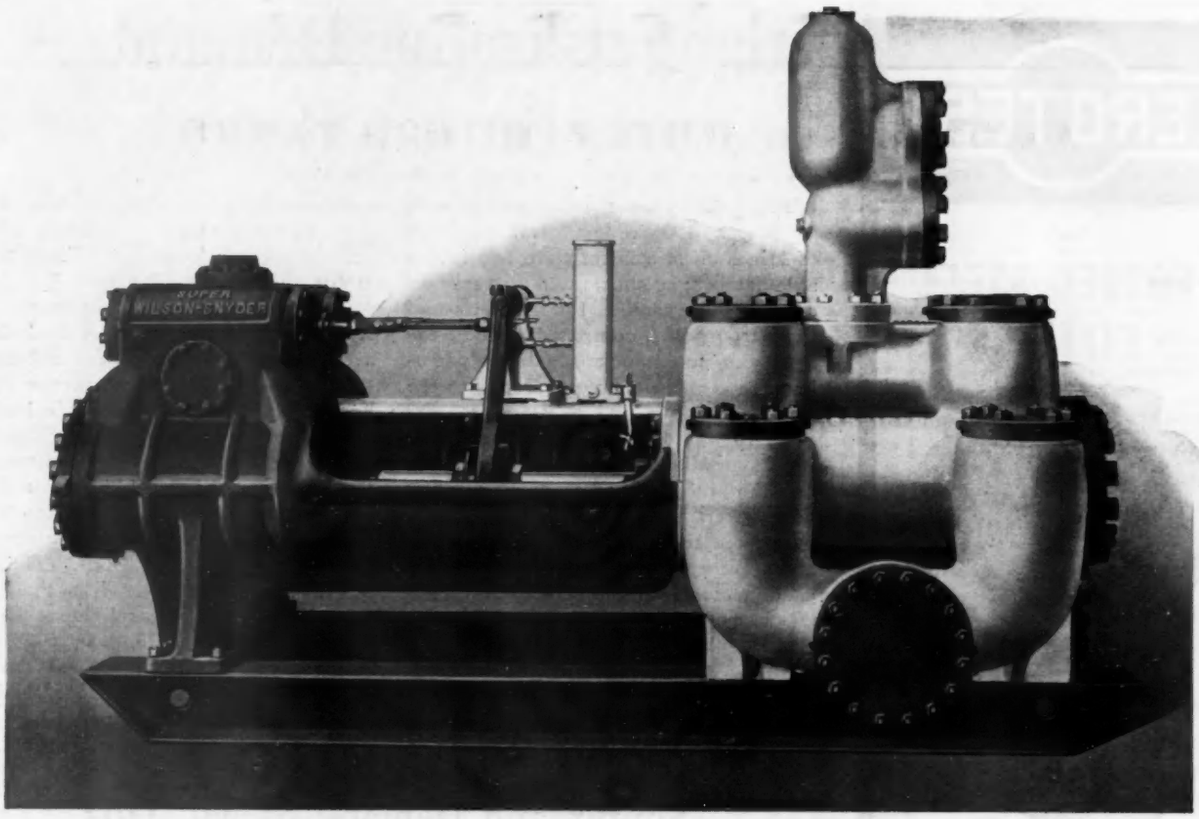
Louisiana—From four to 11 cents a barrel, depending upon gravity.

Arkansas—2.6 percent of gross market values.

Montana—Three percent of gross value at well and ⅛-cent per barrel.

Wyoming and New Mexico—Production tax based upon state and county assessments.

California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.



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Higher Gasoline Demand Features Bureau Report

FEATURING the recently released March, 1935 report of the Bureau of Mines on petroleum were two favorable factors: a substantial increase in demand for gasoline, for domestic and export purposes, compared with a year ago; and an important gain in petroleum product prices, compared with the previous month and a year ago.

There was one feature of the industry's statistics for the month that was, on the other hand, not favorable; namely, an increase of about 2,500,000 barrels in the stocks of all oils. The stocks of refined products and natural gasoline together increased about 700,000 barrels, while crude oil stocks increased about 1,800,000 barrels.

Gasoline Demand Up

Indicated domestic demand for motor fuel in March was 31,997,000 barrels, a daily average of 1,032,000 barrels. This demand represented an increase of 4.8 percent over a year ago. Exports of motor fuel increased materially. The daily average for March was 84,000 barrels, compared with the revised daily average of 45,000 barrels for February.

A gain of 0.2 percent in average gasoline yield partially offset a decline in crude runs to stills. But daily average motor fuel production declined, nevertheless, from 1,199,000 barrels in February to 1,178,000 barrels in March.

Gasoline stocks reflected the curtailment in refinery operations. The net increase in March was less than expected. The total gasoline stocks on hand March 31, 1935, was 66,290,000 barrels, comprising 60,405,000 barrels of finished gasoline and 5,885,000 barrels of unfinished gasoline.

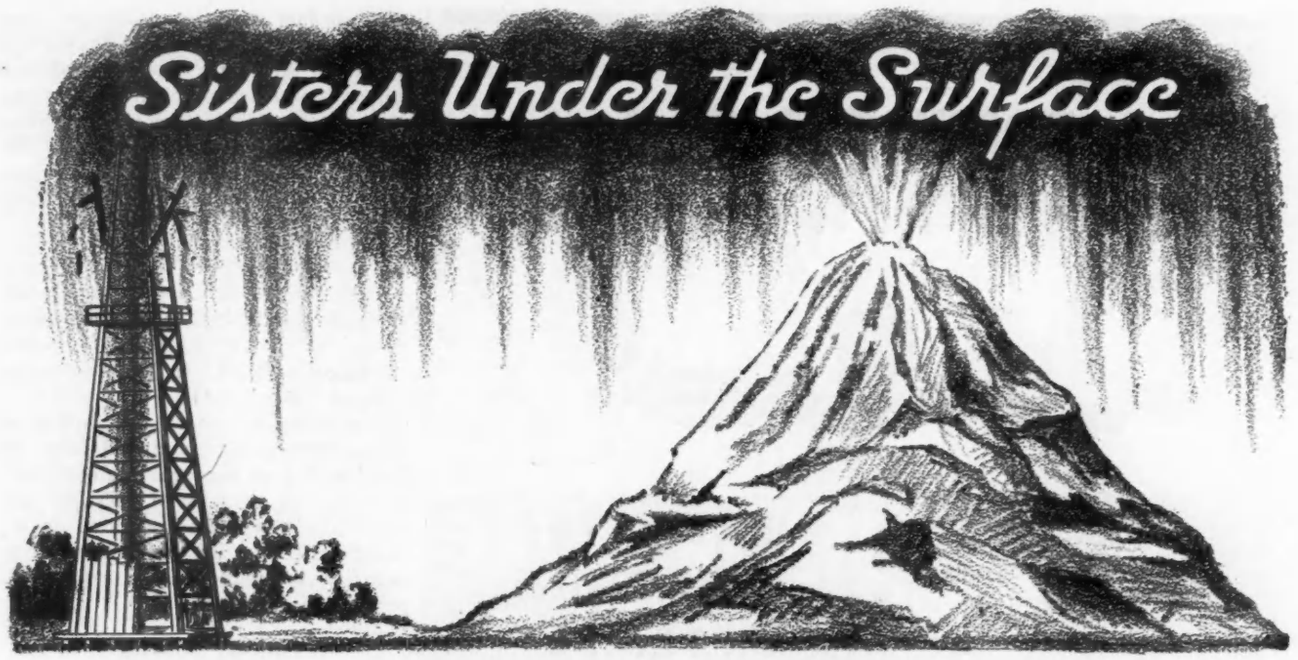
The report reflected the seasonal de-

Supply and Demand of All Oils

Table from Bureau of Mines March, 1935, Report on Petroleum (Thousands of barrels of 42 gallons)

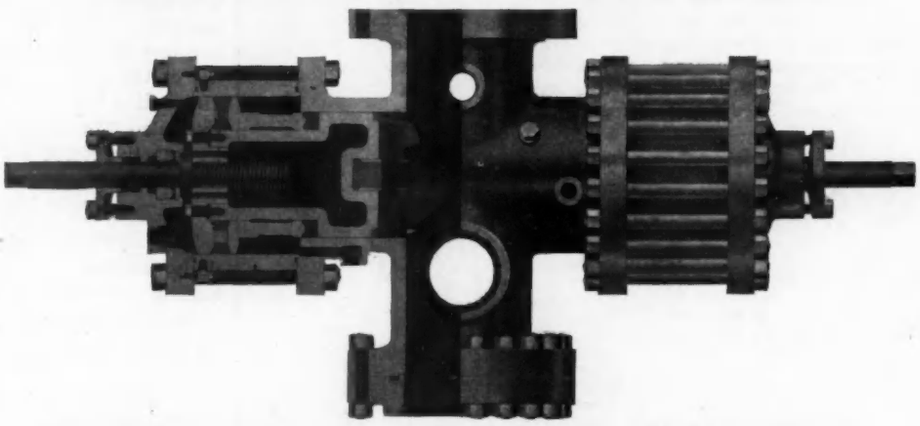
	March, 1935	February, 1935	March, 1934	Jan.-Mar., 1935	Jan.-Mar., 1934
New Supply:					
Domestic production:					
Crude petroleum	81,488	72,763	75,548	232,966	212,974
Daily average	2,629	2,599	2,437	2,589	2,366
Natural gasoline	3,223	2,952	3,019	9,461	8,838
Benzol[1]	153	148	159	448	421
Total production	84,864	75,863	78,726	242,875	222,233
Daily average	2,738	2,709	2,540	2,699	2,469
Imports:[2]					
Crude petroleum:					
Bonded warehouses	720	773	305	2,042	648
For domestic use	1,888	1,130	2,105	4,480	7,593
Refined products:					
Bonded warehouses	970	812	863	2,754	2,493
For domestic use	837	974	330	2,912	579
Total new supply, all oils	89,279	79,552	82,329	255,063	233,546
Daily average	2,880	2,841	2,656	2,834	2,595
Decrease in stocks, all oils	[3]2,528	[3]2,922	3,745	[3]6,681	12,194
Demand:					
Total demand	86,751	76,630	86,074	248,382	245,740
Daily average	2,798	2,737	2,777	2,760	2,730
Exports:					
Crude petroleum	3,281	2,804	2,582	8,454	7,381
Refined products	6,564	[4]3,830	6,771	16,805	17,475
Domestic demand:					
Motor fuel	31,997	[4]26,432	30,528	86,491	84,992
Kerosene	3,959	4,597	4,218	12,855	12,617
Gas oil and fuel oil	30,249	29,643	32,377	93,643	94,823
Lubricants	1,617	1,297	1,643	4,471	4,385
Wax	75	64	78	208	250
Coke	465	593	736	1,760	2,597
Asphalt	709	612	512	1,913	1,273
Road oil	145	124	317	425	633
Still gas (production)	4,007	3,513	3,429	11,328	9,936
Miscellaneous	205	[4]163	193	571	381
Losses and crude used as fuel	3,478	2,958	2,690	9,458	8,997
Total domestic demand	76,906	[4]69,996	76,721	223,123	220,884
Daily average	2,481	2,500	2,475	2,479	2,454
Stocks:					
Crude petroleum	339,139	337,319	354,067	339,139	354,067
Natural gasoline	5,252	4,781	3,926	5,252	3,926
Refined products	226,438	226,201	232,026	226,438	232,026
Total, all oils	570,829	568,301	590,019	570,829	590,019
Days' supply	204	208	212	207	216

[1]From Coal Division. [2]Imports of crude as reported to Bureau of Mines; imports of refined products from Bureau of Foreign and Domestic Commerce. [3]Increase. [4]Revised.



The primary force which causes oil and gas well blowouts is not greatly different from that which impels volcanic eruption

Yet Men and Equipment have Conquered the one for which Men and Equipment are responsible.



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There is a Cameron Blowout Preventer to meet every hazardous pressure condition encountered in drilling and well completion today, whether the operator desires manual closing and opening, fluid closing and manual opening, or fluid opening and closing. The new SDA Preventer, shown above, represents the latter type, and incorporates advanced packing features which place Cameron still further ahead in the prevention of costly blowouts. The Cameron pressure operated Master Gate and flow line control valve, recently announced, greatly augments the safe drilling control long common to the Cameron line.

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cline in fuel oil consumption, in connection with figures on indicated demand for kerosene, gas oil and fuel oil, and petroleum coke. The stocks of most of those fuels continued, however, to decline. The demand for lubricants was higher than in February, but not quite as high as in March last year.

Product Prices

The price index for petroleum products for March, 1935, according to the Bureau of Labor Statistics, was 49.8, compared with 48.7 in both February, 1935, and March, 1934.

The refinery data of the Bureau of Mines report were compiled from refineries with an aggregate daily recorded crude oil capacity of 3,655,000 barrels. These refineries operated during March, 1935, at 68 percent of their capacity, compared with a ratio of 72 percent in February, 1935.

Stocks Increase

Along with the decline in crude runs to stills, there was an increase in crude oil production. The result was the above indicated material increase in crude oil stocks. The total of crude stocks at the end of March was 339,139,000 barrels.

United States crude production in March, 1935, was shown to have amounted to 81,488,000 barrels, a daily average of 2,628,600 barrels. That daily average was the highest since the middle of 1934. It was about 30,000 barrels above the February, 1935, average. It exceeded the average of March, 1934, by nearly 200,000 barrels.

Crude Production

The 30,000-barrel increase in the daily average production for March, 1935, was divided among several states. Oklahoma had about one half of the increase, Texas about 5000 barrels, and Kansas about 6000 barrels. The rest was scattered among various states. California's output remained virtually unchanged, a little under 500,000 barrels daily.

Oklahoma production exceeded 500,000 barrels daily for the first month since July, 1934. East Texas output showed little change, the average being 494,200 barrels, against 493,100 barrels in February. Drilling in that area was greater than in February, increases having been recorded in number of wells completed, total initial production, and wells drilling at the month-end. Louisiana's steady increase in production continued. The Kansas daily average of 155,500 barrels was the highest for any month in recent years and probably the record for all time.

Texas Oil Taxes Are Increased

Austin, Texas.—Increased income for conservation enforcement is provided in a bill passed Friday by the Texas House and Senate. Both legislative bodies approved by a two-thirds vote a conference report on the bill increasing the crude oil tax to 3/16 cents. A clause providing for a $25 fee for filing a permit to drill or deepen a well was rejected.

The bill would increase by 50 percent the current income to the Texas Railroad Commission by increasing the tax on crude oil from ⅛ to 3/16 cents per barrel. The current state allowable is approximately 1,030,000 barrels per day, which brings an income of $1287.50; on this basis the new tax would bring a daily income of $1931, or $704,815 annually.

The bill diverts to the use of the attorney general for conservation enforcement $60,000 per year, approximately. Another $12,500 is turned to the State Labor Commissioner for administration of Labor Laws. Why this diversion would be included was not explained. The amendment was attached in a senate sub-committee. There is no oil law which the labor commissioner is called upon to enforce, unless a pending bill requiring annual inspection of oil field boilers should be passed.

Raise East Texas Allowable Output

Austin, Texas. — Potential tests on four wells on the east side of the East Texas field have resulted in increased allowables for a great many wells in that zone, according to Gordon Griffin, chief petroleum engineer for the Texas Railroad Commission.

The tests were made on four wells owned by Gulf Production Company, and the potentials ranged from 900 to 1000 barrels per hour for each of the wells.

Because of these increased allowables, the top allowable for the field on May 1 was higher than the April allowable, despite a reduction in the potential factor allowance from 3.45 to 3.4 percent of the hourly potential.

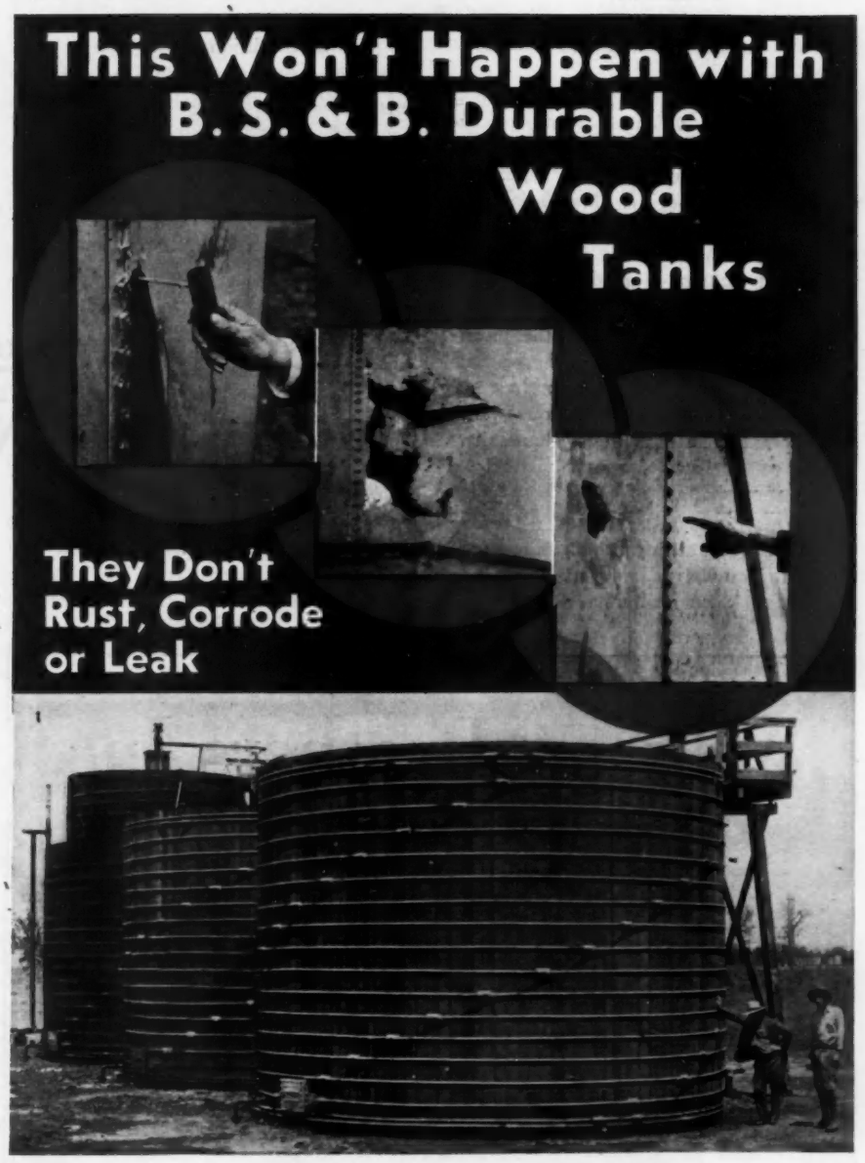
This change resulted in a total field allowable of 447,160 barrels per day on May 1, bringing the total state allowable to 1,030,561 barrels, 1339 barrels below the allocation of 1,032,900 barrels recommended to the railroad commission by the Department of the Interior as the probable consumer demand for Texas crude during May.

A. S. M. E. Power Meeting Successful

Tulsa. — Registration of more than 175 and a regular attendance in excess of this number at all the technical sessions marked as a success the national meeting of the Oil & Gas Power Division of the American Society of Mechanical Engineers held here May 8 to 11. That the program was of wide interest was indicated by the nature of discussions and by the fact that over 75 percent of the registration was from outside of Oklahoma.

The use of Diesel power and problems in connection therewith properly dominated the program since this type of power has come into wide usage in pipe line transportation systems and is rapidly becoming more popular in the development branch of the petroleum industry.

V. T. MOON, formerly chief construction engineer for Marland Oil Company and now connected with Williams Brothers of Tulsa, is to be appointed chief highway engineer of Oklahoma, according to announcement made in Oklahoma City on Tuesday, May 7.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Pipe Lines Asked to Report to I.C.C. on Reconditioning Work

Washington, D. C.—Pipe line companies throughout the country have been asked to report to the Interstate Commerce Commission such reconditioning work as they may be preparing to undertake, so that commission engineers may secure data on condition of the equipment for use in the valuation survey now being made.

So far, it was said, only one or two reports of this nature have been received, but a larger number are expected in the near future as the valuation work gets under way.

Orders were issued by the commission April 12 under which all common carriers owning or operating a pipe line who are subject to commission regulation were required to begin within 30 days the taking of an inventory of all their property, except land, showing the quantities, units, and classes or kinds of property and the condition thereof.

Instructions with respect to the inventory require carriers to show the year of construction, installation or purchase of the property, whether new, second-hand or reconditioned. If second-hand, the length of service elsewhere is to be shown, if available.

Data also is to be submitted regarding wear and decay, such test pits as are necessary to provide an adequate record of the physical condition of buried pipes and fixtures being required. The test pits are to be dug at such intervals as may be required in order to reveal the condition of the line, and a four-foot section of the pipe is to be exposed and thoroughly cleaned. The exposed sections are to be marked off in four one-foot sections and maximum pit depths measurements made and recorded for each of the one-foot sections.

Information also is to be given as to any suggested conditions having bearing upon the physical condition of the pipe or upon its expected normal service life; record is to be made whether maintenance is normal, that is, such as to secure average service life, and note is to be taken of any conditions which tend to shorten or lengthen service life.

It was explained by commission officials that the requirement that carriers report reconditioning work to be undertaken is to aid in the valuation work.

Having information, for instance, that five miles of a 200-mile pipe line is about to be reconditioned, the commission can send engineers to the point where the work is to be done. There, the engineers can analyze the old pipe which is removed and from its condition gauge the condition of the rest of the line in that area.

Thus far, the most important report the commission has received was from Standard Pipe Line Company of Louisiana, which is reconditioning its line from Shreveport northwest into Arkansas.

It was pointed out that extensive reconditioning would have an influence upon valuation. The field inventory and valuation was initiated by the commission in January, and there are now field parties operating in Houston, Tulsa, Dallas, St. Louis, Chicago and Pittsburgh. In Texas, these parties have the assistance of engineers of the Texas Railroad Commission. Two groups are working north from Houston investigating service life of equipment.

Reconditioning Work Now Underway on North Texas Line

Fort Worth, Texas. — Reconditioning work is in progress on Stanolind Pipe Line Company's eight-inch trunk line system extending north from its Ranger district station to Graford junction, where connection is made with the Mid-Continent-Mexia-Texas City system. Approximately 45 miles of line originally built by Sinclair Pipe Line Company in 1918 to handle high-grade crudes from the Ranger and Desdemona areas is scheduled for overhauling in such sections that register a corrosive condition.

The Ranger-Graford unit was not insulated, or given protection from exterior soil pitting when placed in service about 17 years ago. Within the past several years the bulk of the oil traffic through the line has consisted of relayed shipments of West Texas crudes, having a higher sulphur content. This change in the quality of oil handled has exposed the line to a type of corrosion in addition to usual adverse soil conditions that did not prevail during the period when the system was transporting sweet crudes exclusively from Central West Texas.

Stanolind Pipe Line Company is using its own reconditioning crew in making the repairs to the Ranger-Graford unit, according to O. H. Powell, superintendent of the Texas division. The work is being supervised by J. C. Burch, Mineral Wells, Texas, main line foreman. The personnel of the repair crew includes workmen that have specialized in pipe line

(*Continued on page 82*)

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Standard May Again Operate Teapot Dome Line

Casper, Wyo.—No definite plans for laying a 150-mile pipe line from Clayton, Wyoming, to Bridgeport, Nebraska, have been made, but it is believed that a line of some size will be necessary to supply a number of western Nebraska towns with natural gas after the spring of 1936. Northern Utilities Company is now using a section of the famous Teapot Dome oil line as a gas line, but must find another means of distribution within a short time.

It was learned this week that last fall Standard Oil Company served the 18 months stipulated notice on Northern Utilities Company that it would not renew the lease on the line. Whether the line will see actual construction is not yet definitely determined as Standard Oil Company and the gas company may reach an agreement to renew the lease.

Standard Oil Company (Indiana) is taking back the line in order to run its 12,000,000 barrels of stored light oil from its Clayton tank farm out of the Rocky Mountain region. The crude will be run to Freeman, Kansas, and thence into major pipe line systems from Texas and the Mid-Continent areas to the company's refineries at Neodosha, Kansas, Sugar Creek, Missouri, Wood River, Illinois, and Whiting, Indiana.

The crude has been held at Clayton for the past eight years as a reserve for the company's Casper refinery. Officials give as the reason for removing the crude the excessive taxes levied against it by Converse County, and contend that it is no longer economical to hold the crude in storage at Clayton. Removal of the crude will reduce Rocky Mountain stocks more than half, and from some quarters this is considered a change for the better, as it will tend to strengthen the crude oil price in the Mountain area, and stimulate development of new fields.

New Michigan Gas Line To Operate by Fall

Mt. Pleasant, Mich.—With formal approval anticipated shortly by the Michigan Public Utilities Commission on application for permits to construct gathering mains and a gas line into the Mecosta-Montcalm gas area, plans are going ahead to have the system in operation by fall.

Petroleum Transportation Company will act as a common gas purchaser in the field and market gas to Consumers Power Company, which operates a gas main from the Broomfield pool to Saginaw, approximately 70 miles, and will extend the main 30 miles west to tie into the new system. Cost of the gathering system and gas main extension is estimated between $300,000 and $500,000.

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Denver - - - - - - Colorado

A PETITION to the CONGRESS

Submitted by

THE AMERICAN PETROLEUM INSTITUTE

The American Petroleum Institute, with a substantial and representative membership from a twelve-billion-dollar industry, which has more than two million owners and over 1,000,000 employees, respectfully petitions Congress to pursue policies which will permit this industry to take its rightful place in the march of recovery.

The Institute asks this with full appreciation of the earnest endeavors which have been made by the federal authorities, in the past two years, to speed recovery. These efforts the petroleum industry has generously supported, recognizing that in a time of such emergency it had a patriotic obligation to co-operate in bringing about re-employment and restoring the country's purchasing power. Its annual payroll, approximating $1,569,600,000, is practically equal to the 1929 payroll and in real wages it is 7.2 per cent higher. In fact the per capita yearly wage paid by most of the oil companies has always ranked high in industry. In the past two years the industry reabsorbed 217,200 persons. Taxes on its properties, products and operation contribute $1,250,000,000 annually toward the maintenance of government.

The Institute believes that the people who depend upon our 24,600,000 automobiles for transportation, the farmers who cultivate the land with tractor drawn equipment, the operators of thousands of industrial plants and the many other users of petroleum products are best served when competition is free, when the operation of economic law is unhampered and when the profit incentive stimulates initiative and inspires invention. The free operation of these forces inevitably tends to insure quantity, improve quality and to reduce prices. These are the true tests of the service rendered by any industry to the public.

Gasoline consumers cannot continue to enjoy these advantages if the responsibility of management is transferred from the thousands of individual companies to a federal bureau.

These advantages can be assured if the federal and state governments will remain each in its own sphere, observing the separation and limitation of powers which the Constitution has wisely ordained and the Supreme Court by many decisions and precedents has clearly defined.

Legislative uncertainties, threats of governmental control and interferences with the legitimate development of a great industry which has served the public satisfactorily are handicapping our business and retarding progress toward a constructive solution of our problem.

Out of an intimate knowledge of conditions and a long experience in serving the American people we feel qualified to offer a program of principles, which will materially assist in stabilizing conditions under which the oil industry can operate to the direct advantage of both the makers and users of petroleum products.

We respectfully submit:

FIRST: That there should be a minimum of regulation by government, state or federal, to the end that private industry may be free to serve the public most efficiently and economically.

SECOND: That the state governments, having the power to regulate production of crude oil and natural gas to prevent waste and so conserve a valuable natural resource, should be encouraged in that effort.

THIRD: That the Federal Government, having the power to deal with interstate and foreign commerce, and to authorize interstate compacts, should supplement the production control effort of the states:

By making permanent and rigidly enforcing the Connally Law (S. 1190) prohibiting the shipment in interstate and foreign commerce of oil produced in violation of state laws;

By approving the interstate compact which has already been ratified by the legislatures of five of the principal oil producing states;

By directing the U. S. Bureau of Mines, a competent fact-finding agency, to ascertain the crude oil production necessary to meet the consumptive demand of the nation and to make its findings available to the interstate compact commission and the respective conservation authorities of the oil producing states;

By exercising control of imports to a proper ratio to domestic production for such a time as is necessary.

FOURTH: That as concerns marketing, the field of greatest competition, there is no reason to single out the oil industry for special federal intervention. That industrial pacts and agreements when voluntarily made by any industry for the purpose of eliminating unfair methods of competition should be permitted.

FIFTH: That any such economic straitjacket as is contained in S. 2445 or similar proposals for the enlargement of the N.I.R.A. would serve to increase the price of gasoline and demoralize the industry.

In support of the foregoing we point to the record of the oil industry during the last fifteen years as one of outstanding public service.

But for cheap gasoline many industries which have contributed substantially to American economic progress could not have enjoyed such remarkable development. Notable among these are automobile and tire manufacture and modern road building, with the related industries such as steel, textiles, plate glass, leather and numerous accessories.

The production, transportation, refining and distribution of petroleum and its products go hand in hand with the automotive industry. Important as it is that automobiles should meet all reasonable demands upon them, it is equally important that the car owner, wherever he may travel, should have access to a plentiful supply

of gasoline and oil, of good quality and at reasonable prices.

During the last fifteen years the efficiency of American made automobiles has steadily increased while their price has as steadily declined. Today, the United States makes 75 per cent of all the automobiles in the world. During the same period the petroleum industry has supplied the car owner with gasoline and oil in ample quantities, of constantly improved quality and at steadily decreasing prices.

In 1920 the average selling price for gasoline exclusive of tax in fifty cities, representing all the states, was 29.7 cents per gallon; in 1934 the figure for the same cities was 13.6 cents—a drop of 54.2 per cent. A barrel of crude petroleum now yields about twice as many gallons of gasoline as it did fifteen years ago. No consumer of gasoline and oil can reasonably complain that he cannot readily procure a plentiful supply of each, of good quality, at reasonable prices. The average cost exclusive of tax of owning and operating a motor car today, mile for mile, is about one-fourth of what it was fifteen years ago.

The free play of economic conditions under which these two great industries have so well served the consumer has been substantially the same. In both there has always been keen, unrelenting competition; and this, in turn, has stimulated new discoveries and new methods, has led to the development of new markets and has constantly tended to improve quality and reduce prices.

Because it has grown so fast, the oil industry has constantly needed large amounts of new capital. Its investment increased from $6,350,000,000 in 1921 to $12,200,000,000 in 1932. During these twelve years $2.94 of new capital was put into the industry for every dollar that was earned, and the annual average earning of the oil industry on its investment was only 1.66 per cent. It is inconceivable that political management could operate a fast-growing and hazardous business on so close a margin as this.

In transportation, particularly, which is such an important factor in costs, the oil industry has devised and developed its own unique systems, giving incomparably cheap movement by pipelines, ocean tankers, and by barges on inland waterways.

Every resource of science and technology has been enlisted in the search for new supplies of oil in the earth. In fact, the chief offense imputed to the industry is that it has been all too successful in finding new pools.

With such a record it is apparent that the hands of the oil industry should not be tied by governmental bureaucracy. The issue between government and private responsibility for this vast industry should not be obscured by vague declarations that the petroleum industry has become affected with a public interest justifying governmental control just because conservation has come to be recognized as a responsibility of government.

The distinguishing characteristic of petroleum and natural gas is their liquid and fugacious nature. In other mining industries the situation is entirely different; for instance, the owner of coal land is not subject to drainage, for he can keep his coal if he likes and his neighbor cannot take it. But when a well is drilled into an oil producing area the "law of capture" permits the surface owner to draw the oil from his well even though it may drain the supply of the adjoining land owner. Therefore, the neighbor must drill and produce his share of the oil or lose it; and his neighbor in turn must do likewise. This was a situation beyond the power of the industry to remedy, and in all flush pools, before the conservation efforts of the states were effective, the "law of capture" resulted in unscientific and wasteful practices and overproduction. The oil producing states and the industry itself have now come to an intelligent conception of what real conservation means. The industry believes that true conservation means the scientific control of production making for greater recovery, as well as efficient and economic utilization of crude oil.

It is the duty of the oil producing states, in the public interest as well as in the interest of the industry, to prevent waste of crude oil and thereby conserve the supply. This duty is the obligation of government and when that obligation shall have been discharged, there is nothing in the inherent nature of petroleum or in the conduct of the business which requires or justifies the oil industry being declared a public utility any more than in the case of any other producer or manufacturer of a commodity of general use.

In marketing gasoline, the problems are no different from those in the wholesaling and retailing of other commodities. Whether there are too many filling stations; whether there is waste in the number of retail stores that market clothing, groceries, beverages or the like, is a problem that concerns our economic welfare as a whole and not particularly any one business. It is self-evident that the problems arising out of competition and the operation of economic laws in every hamlet in the country cannot be solved by a bureau at Washington which undertakes to regulate each minute detail of our vast and complicated business structure. There should be no economic tinkering, and no political control.

Unfortunately, governmental agencies, once organized and endowed with some measure of authority, aspire to continue their existence and increase their authority. Any proposal to amend the National Industrial Recovery Act with provisions that convert it from what is theoretically a system of governmentally supervised, industrially self-regulated codes of fair practice into a system of federal industrial dictatorship becomes a striking example of this tendency to encroach.

We have proceeded on the road to recovery sufficiently to consider methods of orderly development of business as a substitute for devices created in moments of national emergency and desperation. The time has come to consider the long range view of American economic progress.

The oil industry is prepared to do its part, and demonstrate its confidence in itself and in the future of the country, if it can but know clearly that its efforts are not to be checkmated by constant change, bureaucratic dictation or usurpation of power.

Congress has an unparalleled opportunity to aid recovery by a frank recognition of separate fields of federal and state responsibility under the Constitution.

Respectfully submitted
By order of its Board of Directors,
AMERICAN PETROLEUM INSTITUTE
Axtell J. Byles, President.

Reconditioning Work Now Underway on North Texas Line

(*Continued from page 78*)

corrosion problems and electric welding. Approximately 20 men are used in the single crew now at work about seven miles north of Ranger.

Relying upon instruments that reveal adverse soil conditions along the route of the line without uncovering the pipe as a guide, Stanolind Pipe Line Company is skipping over sections of the line that score a negative report on corrosion. Accurate records are kept on each foot of line reconditioned.

Sections of the line revealing a pitted condition after being machine-cleaned and carefully surveyed with an instrument developed by the company for measuring the depth of pits are cut out and replaced with new joints. The company has elected to discard the damaged sections rather than to attempt patching by welding half soles and possibly have leaks to combat within a few years.

Route traversed by the pipe line has been obliterated by the elements along the sandy stretches, necessitating the usage of a pipe line finder. This portable pipe line locator, operated by two men, is made from a high frequency transmitter and radio receiver, functioning with a selective directional loop antenna. It affords an accurate and speedy method of outlining the route to be flagged as a guide for the instruments crews to follow in making the soil resistivity survey and condition of the line as regards to corrosiveness.

A double check for corrosive spots along the line is obtained by Stanolind Pipe Line Company is had through the use of a patented earth resistivity measuring instrument, or commonly referred to as a cane. The company also utilizes a millivoltmeter for registering long-line current in checking the condition of its line. Sections of the line registering a positive reading by these instruments are marked for reconditioning, while that portion of the line showing a negative reading is passed up without being disturbed.

Readings with the earth resistivity meter are taken at about 100-foot intervals. The instrument consists of a negative and positive electrodes, and an ohm-cm scale. The rods or canes are steel covered, with moulded baeklite tubing. Current for the meter, which indicates the ohm-cm, is obtained from dry cell batteries. In conducting a soil survey the electrodes are forced into firm contact with the soil, separated by an interval of one to two feet. Current is applied by the operator in pressing a button, and the resistivity of the soil registers on the meter scale.

Operation of these instruments is confined to workmen specially trained for this type of duty, and each have had considerable experience in handling the millivoltmeter as well as the earth resistivity cane.

Removal of the top soil from the buried line is performed with a light duty ditching machine, followed by a pick and shovel crew. Cranes mounted upon tractors are pressed into service to raise the line about one foot above ground to be placed on skids.

Actual conditioning of the line involves the use of a pipe cleaning machine as the initial step. A polishing crew retouches the bad spots not thoroughly reached by the machine. Inspectors pass judgment on sections of the line to be cut out because of excessive corrosion.

Sections of the line found to be in a good condition are covered with a primer coat of paint and returned to the trench, while that showing evidence of corrosion,

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but not sufficient to justify cutting out, is covered with a thick application of rust preventative compound. This coating is applied hot, and is immediately wrapped spirally with asbestos felt paper. Care is taken in returning the pipe to its original trench against damaging the insulation material.

Pipe line collars showing leaks, or signs of having leaked in the past are electric welded in place.

South Texas Fields Are Receiving Outlet Facilities

San Antonio, Texas.—One pipe line project was assured and a second was in prospect, giving the lower Mirando District and the Rio Grande Valley oil fields an outlet to deep water. The pipe lines are expected to overcome a market problem which has materially affected the price of crude produced in this new, but rapidly developing territory.

Crude price bonus is being offered producers in the Samfordyce field, Hidalgo County, to support a direct pipe line outlet projected by Bert F. Weekly, president of the Cortez Oil Company, Fort Worth, and associates to connect with deep water facilities on the Port Isabel Ship Channel, near Brownsville.

Weekley and others contemplate building a six-inch line from the field, and about 85 miles of trunk line will be required to reach a desirable location on deep water loading facilities. Construction of the carrier hinges upon cooperation of producers in contracting to deliver a "pay load" for the line, which will have an initial capacity of about 7500 barrels daily, according to present plans.

Production in the Samfordyce field tests about 21 gravity, with a high lube oil content. It yields about 35 percent gasoline, having a high octane rating, when processed by the cracking method, but is not profitable to refine in a skimming plant. There are more than 60 wells on production, with a flat allowable of 70 barrels daily. This oil commands a price of 65 cents per barrel at the well, and is being marketed by independents via tank cars consigned to refineries at Corpus Christi and Houston. Weekley et al are reported to be offering five cents per barrel premium for the first year and 10 cents per barrel the second year.

Cortez Oil Company has five wells on production, according to Mr. Weekley, and expects to have a total of 20 wells when its development program is concluded.

(*Continued on page 102*)

Oklahoma Completions Reach 16-Month Record

Tulsa.—Oklahoma operators had a big week with the largest number of completions, the largest total initial production and the greatest amount of drilling footage since January 1, 1934. Forty-four oil wells were given an initial rating of 126,962 barrels and six gas wells a combined initial volume of 54,500,000 cubic feet. In addition there were four abandoned locations and 30 dry holes, a total of 84 completions for the week. These involved 183,297 feet of drilling, including 2769 feet in seven old wells, 17,067 feet in eight wildcat dry holes and 5100 feet in one wildcat discovery well southeast of the Lucien pool in southwestern Noble County.

Continued brisk activity in the Fitts pool placed Pontotoc County in the new work lead with 13 first reports; Osage County had seven; Seminole and Stephens Counties, five each; Creek and Okmulgee Counties, four each; Logan County, three; Carter, Noble, Oklahoma and Wagoner Counties, two each, and Beckham, Choctaw, Hughes, Jackson, Kay and Lincoln counties, one each; a total of 55 first reports compared to 51 during the preceding week.

Coal County Area Is Getting Big Play

Centrahoma, Okla.—Carter Oil Company et al announced location late in the week for John Thompson 1, C S ½ NE NW 34-2n-9e, on the Centrahoma "high" less than a half-mile south of here in west central Coal County. This structure originally was blocked by Ramsey Petroleum Corporation and last September a deal was made for Carter Oil Company to take over one-half interest and drill two 7000-foot tests if necessary to go to that depth. Subsequently Ramsey sold an eighth interest to Stanolind Oil & Gas Company and another eighth to J. E. Mabee. It is understood that the second test will be located in Section 28 of the same township. The area, which is said to be one large high with three superimposed structures, has received a wide play during the past six months and the ownership now contains the name of most of the major companies which operate in Oklahoma.

Mt. Pleasant, Mich.—The Naph-Sol Refining Company of Muskegon this week put into operation its new $250,000 Dubbs cracking unit, first unit of its kind installed by a Michigan independent refinery.

The unit has a charge capacity of 1200 barrels. The company is headed by Walter Anderson.

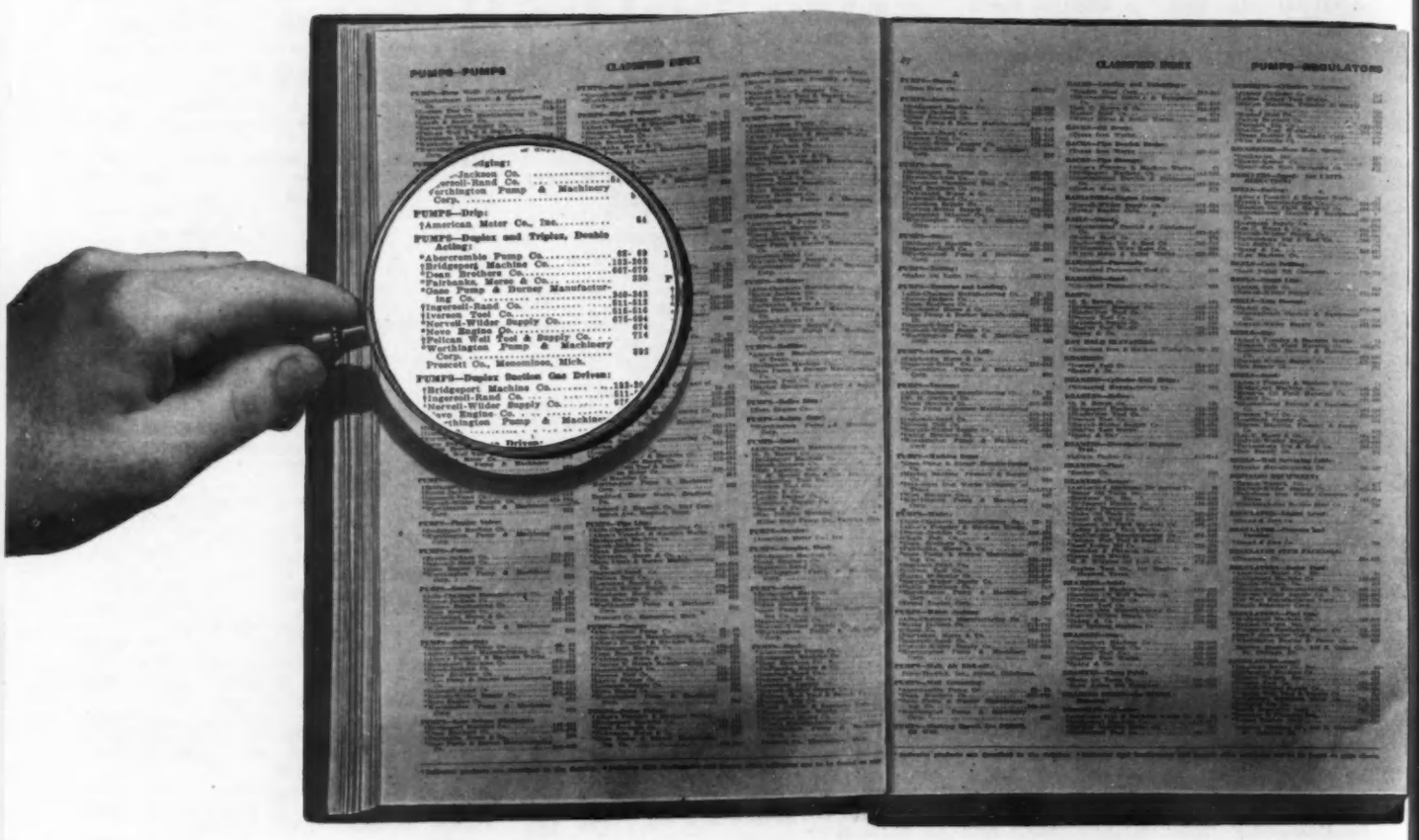
Oklahoma Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ATOKA COUNTY—		
Remler & Reeves, Wm. Rogers 1, sw se sw 6-2s-12e	*	1278
CARTER COUNTY—		
Schermerhorn Oil Co., Smith Cruse 12, ne nw sw sw 5-4s-3w (otd 1215)	*	2314
Shell Pet. Corp., Wirt Franklin 48, sw ne ne ne 8-4s-3w	19	1175
COMANCHE COUNTY—		
Henry Rosenthal et al, Au-chi-re-ah 1 "B" nw nw nw 5-1n-9w	*	2209
CREEK COUNTY—		
Sidwell Drilling Co., McGilvray 1, sw ne ne 30-14n-8e (otd 3570)	50	4064
Akin Oil Co., Pickett 2, ne ne ne nw 2-17n-8e	12	2726
Dot Oil Co., Yarhola 9, sw sw sw nw 8-18n-7e	*	2737
Magnolia Pet. Co., Musseleum 17, ne ne sw ne 8-18n-7e (otd 2485)	153	2575
Akin Oil Co., King 5, se sw ne sw 35-18n-8e	30	1591
Big Four Pet. Co., Templin 3, se se ne sé 34-19n-8e	140	2612
Wright, Fee 4, ne ne ne sw 19-17n-11e	*	2817
Whitten et al, Tiger 1, sw se ne nw 16-18n-12e	¶1	1141
GARVIN COUNTY—		
George Pace, Smith 1, sw sw ne 35-1n-1e	*	2523
National Production Co., Littrell 1, ne ne ne 31-2n-3w	*	1528
HUGHES COUNTY—		
Iglehart, Rogers 1, ne ne nw nw 32-7n-8e	*	4228
JACKSON COUNTY—		
Golding & Cochran, Duncan 1, ne ne ne ne 34-2n-21w	*	2505
Jack Kilgore et al, Wooldridge 1, se se ne 15-3n-21w	*	2266
KAY COUNTY—		
Max Kelly et al, Spore 1, nw nw se 17-27n-2e	lcn.	abd.
Harris-Haun, Schuessler 1, cnw sw 3-28n-2e	*	3945
Burton Lewright et al, Liseman 1, sw ne se 4-28n-2e	lcn.	abd.
KIOWA COUNTY—		
Hinson & Patton, Beeler 2, n½ nw ne ne 11-6n-15w	*	315
LINCOLN COUNTY—		
The Texas Co., Hughes 1, nw nw ne 34-14n-4e	*	4240
LOGAN COUNTY—		
The Texas Co., Denny 1, cne se 33-17n-4w (otd 6063)	6766	6229
MARSHALL COUNTY—		
Kilbourne, Burge 6, sw se se se 25-7s-5e	15	529
MURRAY COUNTY—		
Equitable Oil & Gas Co., Baer 1, sw nw nw 21-1s-3e	*	1250
MUSKOGEE COUNTY—		
Young et al, Asbury 1, sw sw sw ne 21-16n-15e	*	1350
NOBLE COUNTY—		
Stanolind Oil & Gas Co., Amerada Pet. Corp. & Slick, Fuller 1, cse sw 34-20n-2w	3624	5100
Shell Pet. Corp., Tate 1, ne nw nw 29-20n-2w	*	697
OKFUSKEE COUNTY—		
Wentworth, Holmes 1-A, ne nw nw 29-11n-11e	*	2800
OKLAHOMA COUNTY—		
I.T.I.O. Co., Wisel 5, se se se 26-11n-3w	96	6663
OKMULGEE COUNTY—		
Moffett, Grayson 8, cwl nw nw 16-11n-12e	*	1450
Penrod Oil Co., Edwards 4, se ne ne ne 30-12n-14e	¶1	2160
Chas. A. Lambert, Harris 8, sw sw ne 1-14n-14e (otd 1698)	25	1687
Lynch, Thomas 3 sw sw ne nw 30-14n-14e (otd 1360)	6	1920
J. L. Selby, Thompson 1-A, cwl ne nw 6-14n-15e	*	2165
Thompson 2-A, ne¼ nw nw 6-14n-15e	*	1530
Lease Investment Co., Bell 2, sw sw sw 27-15n-11e	45	2877
Garrett, McIntosh 1-A, cel ne ne 1-15n-14e	20	1232
Francis, Adams 1-A, ne nw nw 33-15n-14e	20	1506
OSAGE COUNTY—		
Files 1, ne ne sw 23-21n-8e	30	966
Barnsdall Oil Co., 12, sw sw nw nw 30-21n-9e	lcn.	abd.
Johnson Oil & Refining Co., 12, sw nw sw se 30-21n-9e	40	321
Ringold, 6, se ne se sw 30-21n-9e	*	340
Comail Oil Co., 7, nw se ne sw 32-22n-8e	80	2115
Gault & Brown, 1, se se se 12-24n-7e	lcn.	abd
Sinclair Prairie Oil Co. 7, sw se sw nw 15-24n-7e	77	2595
Lewis Producing Co. & Continental Oil Co., 9, sw ne sw 16-24n-7e	583	2640
PONTOTOC COUNTY—		
Magnolia Pet. Co., Shaffer 2, sw se nw 25-2n-6e	3104	4348
Phillips Pet. Co., Norris 1, ne ne se sw 25-2n-6e	2592	4255
Norris 6, sw ne sw 25-2n-6e	¶10-33,048	4250
Magnolia Pet. Co., Simpson 1, sw se ne 29-2n-7e	¶44	2058
Moore et al, Craddock 2, sw nw sw 29-2n-7e	7424	4295
Craddock 3, nw sw sw 29-2n-7e	8868	4121
Craddock 4, sw sw sw 29-2n-7e	5808	4069
Carter Oil Co., Richards 9, se ne se 30-2n-7e	5158	4445
Richards 10, sw sw se 30-2n-7e	¶16-12,840	4085
Richards 12, ne se se 30-2n-7e	12,420	4083
Deep Rock Oil Co., Hardin 4, se se ne 30-2n-7e	12,624	4302
Carter Oil Co., Smith 2, ne ne ne 31-2n-7e	9660	4002
Premier Oil Co., Layne 3, nw sw nw 30-5n-5e (otd 2262)	150	2578
POTTAWATOMIE COUNTY—		
Mohawk Oil Co., Walker 1, se se sw 7-7n-4e	268	3932
Magnolia Pet. Co., Hathcock 1, ne ne sw 11-7n-4e (otd 3999)	45	4043
Hathcock 2, nw ne sw 11-7n-4e	153	4047
Harden 3, se sw nw 12-7n-4e	*	4250
Atlantic Oil Co., Boyd 2, ce½ sw se 7-9n-5e	230	4166
C. H. Hodges, Schoolland 1, nw sw sw sw 7-9n-5e	30	4187
SEMINOLE COUNTY—		
A. A. & R. W. Vierson, Jones 1-A, ne sw nw 11-6n-6e	35	2386
Crafton, Strothers 1, ce½ ne se 3-9n-6e	*	4192
Sinclair Prairie Oil Co., Campbell 3, sw nw ne 6-9n-6e (pb 4144)	60	4351
I.T.I.O. Co., James 7, nw sw se 24-9n-6e (pb 3990)	507	4175
STEPHENS COUNTY—		
Sykes, Dolan 2, e½ sw nw nw 15-1s-8w	50	2105
George Pace, Gillworth B 8, sw ne ne nw 2-2s-8w	15	1609
TILLMAN COUNTY—		
Buell & Herndon, Haught 1, sw sw ne 22-1n-16w	*	841
TULSA COUNTY—		
Basinger, Withers 1, sw sw sw sw 26-17n-12e (pb 2325)	10	2328
Franchit et al, Soffie 15, se se sw sw 22-17n-13e	*	2036
Hoss, Childers 1, ne ne ne se 3-17n-14e	*	1454
Mechling McIntosh 5, sw se nw nw 13-17n-14e	¶2½	1078
Martin-Boyd Marnett 1, ne nw se sw 2-18n-14e	*	1403
Detmer, Drew 1, cel ne sw 4-18n-14e	¶2	1379
McIntosh 1, cwl ne se 4-18n-14e	¶4	1360
Spartin, Barnett 5, cnl sw se 13-18n-14e	40	1321
WAGGONER COUNTY—		
McCutchen, McKallop (?), sw sw sw se 10-17n-15e	*	1240
White Rose Oil Co., Porter 2, nw ne sw nw 14-17n-15e	*	1165
Hartman et al, Chisson 1, se se ne ne 15-17n-15e	*	1225

*Failures; †Junked; ¶Million cu. ft. gas.

64 Pages of Indices

help locate Equipment



Sixty-four index pages in the 1935 Composite Catalog of Oil Field and Pipe Line Equipment help the busy oil man to locate descriptive matter on oil country equipment in which he is interested. These 64 pages also locate for him the home addresses of the manufacturers and the addresses of their nearest representatives.

However, the Index pages form only one of the many reasons why the Composite Catalog is of practical value to the oil man. Hundreds upon hundreds of pages containing the latest information on the oil country equipment described combine to make the Composite Catalog a real library on oil country equipment.

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USE YOUR COMPOSITE CATALOG

Fitts Pressure Drops 13 Pounds During Month

Ada, Okla.—Between April 2 and May 2, bottom-hole pressure in 18 key wells in the Fitts pool of southeastern Pontotoc County, declined from 1659.3 pounds to 1645.7 pounds while producing 86,524 barrels, a total drop of 13.44 pounds and a decline of 2.79 pounds per barrel of oil produced. Two of the key wells showed pressure increases. Production for the field during that period was 380,662 barrels, a decline in pressure of 0.035 pounds per 1000 barrels.

Logan County Wildcat Is Flowing by Heads

Navina, Okla.—Sinclair Prairie Oil Company's Koatsch 1, SW SW SW 23-15n-3w, closely watched wildcat test 4½ miles southeast of here in southwestern Logan County, has been flowing 15 to 30 minute heads daily, making from 50 to 75 barrels per head according to estimates. Operators have been bailing for more than a week but still have rotary fluid in the hole. The test encountered top of the upper Wilcox sand at 6218 feet but had 4500 feet of water in the hole several weeks ago. Drilling ahead operators encountered second Wilcox sand at 6322 feet and had 1700 feet of oil in 25 minutes on a drill stem test. The 4¼-inch casing was cemented with 55 sacks at 6319 feet with total depth at 6333 feet. Reports have been circulated of the possibility that water, apparently coming from the upper sand body, actually was coming from behind the seven-inch casing set at 6102 feet. Some difficulty was experienced in obtaining and maintaining circulation before this string was cemented.

Fitts Production Is Extended to West

Ada, Okla.—W. A. Delaney et al made an important extension of the Fitts pool early in the week when their Smith 1, NE SE SE 26-2n-6e, flowed 265 barrels the first 35 minutes through tubing and 865 barrels the succeeding 35 minutes through casing. Top of the Bromide horizon was encountered at 4125 feet, the first sand at 4204 to 4219 feet and the second sand at 4277 to 4320 feet. Total depth is 4338 feet.

Will Make Test of Shut in Edmond Well

Edmond, Okla. — Gulf Production Company of Oklahoma, Lindsay 1, NE SW NW 6-13n-32, in the southwestern portion of the Edmond pool of northwestern Oklahoma County, was to be tested within a few days according to reports. This test was shut down several months ago at 6700 feet, where it was reported that no Wilcox sand had been found. A report now being circulated is that Wilcox sand was topped at 6620 feet and that it apparently is a well. Gulf owns a 40-acre lease in a quarter section in which Marathon Oil Company owns the remaining 120 acres. The Marathon title is being contested in court and the Gulf Company trying to obtain title to the entire 160 acres.

Polo Pool Extended Half Mile During Week

Perry, Oklahoma.—Atlantic Oil Producing Company et al's Porter 1, SE NW SW 22-22n-2w, half-mile extension of the Polo pool, nine miles northwest of here in western Noble County, ran wild 12 hours during the week and was estimated making between 30 and 50 barrels per hour from Simpson Dolimite at 4927 to 4932 feet, the total depth. The last three feet of hole apparently was drilled in Wilcox sand.

Gorham Pool Receives Its Largest Producer

Russell, Kan.—Billings' Witt 3, NW NW SE 4-14n-15w, is the largest well ever completed in the old Gorham pool of western Russell County, having pumped an initial production of 1025 barrels in 24 hours without acid treatment. It is an Oswald lime well producing from 3065 feet. The Gorham pool was discovered in 1926. Since that year development has been carried on intermittenly and 51 wells have been completed for a present potential of 9740 barrels.

Kansas Completions Are Highly Successful

Wichita, Kansas.—Although Kansas development did not rise far above the record of the previous week the past seven-day period was highly satisfactory with a success of 79.5 percent. Thirty new oil wells added 24,926 to the state's cumulative initial production for the year and one dry gas well accounted for 4,500,000 cubic feet initially. Eight dry holes brought the total number of completions

Kansas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BARTON COUNTY—		
Darby Pet. Co., Jarus 2, sw nw ne 16-16s-12w	926	3341
BUTLER COUNTY—		
Ramsey & Haynes, Harmon 11, se ne se 24-26s-4e (pb 2655)	75	2660
Rex et al, Loomis 1, cw½ w½ ne 21-27s-4e	30	2002
R. L. Hodge et al, Glaze 2, nw se ne se 4-29s-4e	*	1895
ELK COUNTY—		
Denny et al, Hyde 1, ne ne ne 19-30s-9e	*	1966
ELLSWORTH COUNTY—		
Lario O&G & Gratton, Wright 1, sw sw ne 17-16s-8w	*	3400
GREENWOOD COUNTY—		
Clayton Brothers, Uhl 1, sw sw ne 3-23s-11e	*	1890
Oko Oil Co., Lovett-McNeal 5, nw ne sw 22-23s-13e (otd 1645)	10	1747
Bert Young et al, Coffman 2, sw sw ne 10-24s-12e	10	1847
Shull Drilling Co., Allis 5, sw se nw 17-24s-13e	10	1600
HARVEY COUNTY—		
Phillips Pet. Co., Masters 1, ne nw sw 4-23s-2e	*	2475
Estes Drilling Co., Short 1, nw nw ne 30-23s-3w	170	3361
MARION COUNTY—		
Harwood & Smith, Cowman 5, ne se sw 11-17s-4e	170	2383
RENO COUNTY—		
Barnsdall Oil Co., Sabin "B" 9, nw sw ne 11-23s-4w	1078	3584
Sabin "B" 10, se sw ne 11-23s-4w	1277	3576
Sabin "C" 12, ne sw se 11-23s-4w (pb 3460)	¶14½	3811
Olson Oil Co. & Shell Pet. Corp., Harner 3, se ne nw 14-23s-4w	489	3621
Duckworth 6, sw nw ne 23-23s-4w	1491	3606
Goering "A" 5, ne ne sw 26-23s-4w	1979	3584
Barnsdall Oil Co., Baughman 2, se sw ne 34-23s-4w (pb 3579)	303	3690
Olson Oil Co. & Shell Pet. Corp., England 5, se sw se 34-23s-4w	1733	3605
Tidal Oil Co., Grandon 2, ne se sw 34-23s-4w	lcn.	abd.
Gypsy Oil Co., Krehbiel 6, cw½ w½ ne 35-23s-4w	691	3595
Olson Oil Co. & Shell Pet. Corp., Goering "B" 5, ce½ e½ nw 35-23s-4w	1140	3579
The Texas Co., Guy Stone 1, cnw nw 15-24s-4w	*	3680
RICE COUNTY—		
Phillips Pet. Co. & I.T.I.O. Co., Krampe 1, cw½ nw se 31-19s-10w	1720	3301
Empire Oil & Refining Co., Proffitt 5, sw ne se 6-20s-9w	1470	3261
Gypsy Oil Co., Christopher 8, nw nw ne 6-20s-9w (pb 3243)	633	3245
Christopher 10, se sw ne 6-20s-9w	1068	3263
ROOKS COUNTY—		
Streeter et al, Hoskins 1, se sw se 34-9s-16w	*	3596
RUSSELL COUNTY—		
Palmer Oil Corp., Barrell 4, ce½ e½ se 21-13s-14w	1311	3287
Carey et al, Whitmore 1, n½ nw ne sw 27-13s-14w (otd 3285)	293	3300
Kirk & Jones, Milberger 1, ne nw nw 7-14s-14w	187	3315
Hartman & Blair, Hildebrandt 1, nw ne sw 12-14s-14w	*	3345
Rouback 1, se se nw 2-14s-15w	4076	2790
Central Pet. Co., Dortland "D" 2, se se nw 4-14s-15w	988	3061
SEDGWICK COUNTY—		
Dickey Oil Co., Nolan 5, sw se ne 20-28s-1e	310	3118
STAFFORD COUNTY—		
Stanolind O&G Co., Heyen 2, ne se nw 31-22s-11w	1132	3545
SUMNER COUNTY—		
Lario Oil & Gas Co. & Barnsdall Oil Co., Weinrich 4, ne ne nw nw 23-32s-2e (otd 2110)	136	2905
WOODSON COUNTY—		
Cross, Mason 3, ce½ nw sw 14-25s-13e	20	1491

*Failure; †Junked; ¶Million cu. ft. gas.

to 39, a figure which has been exceeded in only one other week during the present year. The week ending April 13 resulted in 33 oil wells with combined initial production of 30,519 barrels, three dry gas wells, four dry holes and two others, a total of 42 completions.

Russell County dominated the new activity with nine first reports; Reno County had five; Greenwood County, four; Harvey, McPherson and Sedgwick counties, two each; and Barton, Butler, Ellis, Kingman, Rice, Stafford and Sumner counties, one each; a total of 31 first reports compared to 29 for the preceding week. The manner in which scattered operations in the eastern portion of the state are showing up within recent weeks is rather interesting. The past week's reports included seven in east ranges and 24 in west ranges. Drilling footage for the week was 110,281 feet including 912 feet in three old wells and 6745 feet in two wildcat dry holes.

Extension Try at West Chandler Fails

Chandler, Okla.—Stanolind Oil & Gas Company et al's attempt to extend the West Chandler pool in western Lincoln County apparently ended in failure when Campbell 1, SW SW NW 3-14n-3e, one and one-half miles from production, found top of the Simpson formation at 5054 feet, had a small showing of oil from that point to 5072 feet and a showing of water from 5072 to 5075 feet.

Carter Oil Company et al's McFarland 1, SW SW NE 18-13n-4e, a wildcat test in the same area, apparently was destined for failure after getting top of the Wilcox sand at 5279 feet and drilling to 5290 feet with nothing showing it was drilling ahead.

West Texas Reports Short Completion List

San Angelo, Texas.—An aggregate of 6561 barrels of new production was added by West Texas the past week through the completion of 11 oil producers distributed among six counties. There were also three dry holes and one junked test, making a total of 15 completions for the week.

Glasscock County yielded the largest producer through the completion of W. P. Luse and W. L. Pickens' Sam Turner 2, NWc SW NW Section 19, Block 33, T-2-S, pumping 55 barrels of oil on first hour gauge and 51 barrels the second hour from lime at 2289-2291 feet.

The three dry hole completions for the week were on wildcat locations in Ector, Pecos and Stonewall Counties.

East Texas Market Situation Improved With Hot Oil Down

Tyler. — Illicit crude production in the East Texas field had subsided to a negligible volume late last week, with each of the 11 refineries in operation on May 8 credited with processing products supported by tenders approved by the state body. The federal tenders board is more exacting in its requirements, making it necessary for some of the plants to restrict sales to intrastate traffic. Plants catering to tank truck sales in disposing of their gasoline were unable to supply the demand late last week with a dock price of 9½ cents per gallon including five cents taxes. Records of the Texas Railroad Commission credited all tank truck shipments with having approved tenders on May 7 and for several days thereafter several plants were delivering gasoline to trucks before the product had cooled to a normal temperature in order to accommodate the long lines of trucks awaiting load.

Tank truck market for gasoline gives promise of advancing above the current price paid by majors in tank car lots to plants that are adhering to the tender requirements of the state and federal tender boards. Purchases by majors late last week were averaging about 4½ cents per gallon or equal to that paid by truckers. The outlook is considered bright for the tank truck price to advance to 10 cents providing only a few of the 60 idle plants resume operation.

The tank car price situation is not strengthening proportionally because of the large number of skimming plants resuming operation in the greater Mid-Continent after being forced out of the picture for several years due to East Texas price competition. Available supply of the current production of the East Texas field within reach of local refineries amounts to about 19,000 barrels of tendered crude daily. All independent plants operating on products having approved federal tenders are short of crude, a number are making personal pleas for majors to divert crude from their lines to the plants to be processed and the gasoline made available to the company supplying the crude. An independent plant at Overton has contracted for the delivery of 25,000 barrels during May by a major paying posted price plus five cents transportation change and also a five-cents per barrel marketing fee. This marketing charge is in reality a premium. A number of plants have advanced cash sums at nominal interest to small property owners in return for the privilege of running oil from the leases involved. Such practice has prevailed for some months and promises to become general with plants that have surplus cash.

Success met with by the attorney generals departmental staff on duty in East Texas in having American Refining Company, operator of a skimming plant near Big Sandy Place, in receivership May 8 for alleged repeated violation of state regulations creates a new hazard for plant owners that have heretofore elected to ignore the laws.

East Texas Bottom Hole Pressure Steady

Tyler.—Weighted average bottomhole pressure in the East Texas field was estimated at 1217 pounds on May 1, or the same as that prevailing on April 1, according to survey conducted by members of the East Texas Engineering Association. Pressure bomb readings are made on approximately 300 key wells used each month by the engineers in weighing the average for the field.

Failure of the field to register a decline in average reservoir pressure can be largely attributed to sharp reductions in illicit oil production. The fields allowable production for April was 13,218,638 barrels, or 440,621 barrels daily, as compared to a daily allowable of 438,783 barrels during February when the average reservoir pressure dropped four pounds. An analysis of the bomb readings at the close of April reveals that many sections of the field continue to register sharp losses in reservoir pressure but the greater areas scored gains else remained unchanged.

THOMAS C. MEANS, JR., and Herschel H. Jaffe have formed a company to develop some East Texas edge leases. The company will operate as Lone Star Oil Company and will maintain headquarters in Republic Bank Building, Dallas, Texas. Means has been engaged in the oil business for the past 10 years in Texas. Jaffe recently attended Harvard Law School, and is the son of Max Jaffe of Standard Pipe and Supply Company.

15 Percent East Texas Completions Fail to Flow

Tyler, Texas.—Averaging more than 17 completions daily the past week, the East Texas field added 120 flowing and pumping wells; two failures and a junked hole to set a new weekly record for the current year. A greater number of new wells were scheduled for this period, but completions in the lowlands were held up by flood waters. Independent companies and operators, holding about 36.37 percent of the producing acreage credited to the field, completed 83 tests, while total completions for the major companies amounted to 40 wells, all producers. These minority acreage owners have drilled their properties to an average density of one well to about five acres, as compared to about 8¼ acres for the majors.

Non-flowing wells registered a big gain in numbers among completions the past week, with 15 percent of the new producers requiring artificial lifts. Pumping equipment was installed on eight, while nine others were swabbed to determine their initial gauges, and one well in the Kilgore area was com-

East Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
JOINER AREA—		
Bailey & Trimble, E. B. Alford 3 (5-ac)	500	3715
F. H. Brown et al, Lelia Tipps 3 (22.4-ac)	250	3632
Barney Carter et al, T. O. Wright 3-C (2½-ac)	9000	3710
W. J. Collins et al, Sallie Crook 1 (16-ac)	750	3560
Delta Drl. Co., J. H. Henson 3-B (20ac)	480	3650
Ralph E. Fair, Inc., B. F. Maxwell 14 (87.41-ac)	2000	3761
F. W. Fischer & G. H. Eaton, G. W. Eaton 1 (½-ac)	8400	3795
Gulf, W. O. Alford 6 (157.05-ac)	7300	3810
W. B. Hamilton Pet. Co., M. L. Thompson 4 (10-ac)	9000	3712
Humble, M. D. Caldwell 11 (73.1-ac)	11,000	3724
Ida Holt 11-B (91.45-ac)	9000	3778
S. A. Plowman 38-A (228½-ac)	12,000	3723
Hunt Prod. Co., S. A. Plowman 5 (48.15-ac)	11,500	3758
V. E. Reid 13 (120.1-ac)	700	3691
Illinois Oil Co., Mayfield-Shell 37 (197.1-ac)	5000	3798
John E. Mabee Cons'ld Corp., J. B. Wilson 5 (31-ac)	8500	3640
Manahan Oil Co., W. F. Neal-Shell 12 (109-ac)	5500	3816
Marathon Oil Co., C. L. Graham 15, Acct 2 (133.3-ac)	6000	3676
W. T. Grissom 78 (842.7-ac)	7200	3657
Kangerga 7, Acct 2 (65.59-ac)	9000	3654
M. A. Price 20 (205.59-ac)	480	3635
Rhea L. Martin et al, D. E. Tyiska 1 (10.27-ac)	*	3839
Alex McCutchin et al, Frederick 1 (8.09-ac)	1000	3605
Chas. L. McMahon & Ed. Moore, S. S. Cook 8 (40-ac)	5600	3727
Nash & Bloxom, F. Cole 3 (33-ac)	5500	3820
Nivla Oil Corp. (Sutton-Hawkins), D. Bradford 1 (13.2-ac)	480	3630
Octo Oil Corp., Frederick 1-C (11¼-ac)	275	3584
Lelia Tipps 1-B (2.86-ac)	275	3583
Pine Pet. Co., Giles 6 (31-ac)	9500	3752
Pointer Oil Co., T. O. Wright 5 (9.7-ac)	5600	3675
Prince Bros. Drl. Co., Sam Aterberry-Jackson 1 (11.26-ac)	5500	3833
Geo. B. Ray Corp., F. B. Wilson 8 50-ac)	4000	3640
Regent Oil Co., L. Harmon 5-B (3½-ac)	7000	3812
Max Rubin et al, W. P. Keeling 2-B (5¾-ac)	5600	3760
Sells Pet., Inc., Sid Stone 1 (⅞-ac)	7000	3634
Sinclair Prairie, W. W. Holland 13 50-ac)	500	3700
Mayfield Co. 29-A (374.74-ac)	9000	3804
Smith Co. O&G Co. (was Taubert-McKee), Tolliver 3 (6.33-ac)	4900	3760
Sonbar Corp., A. P. Finney 11 (62½-ac)	3500	3715
Southern Oils, Inc. & Fred Hanna, Henson 4 (20-ac)	800	3604
Sun Oil Co., Mrs. A. V. Ritch 9-A (99-ac)	6000	3697
Sutton & Hawkins (was Weir-Onyett) Mary Smith 1 (10-ac)	500	3626
Texas-Canadian Oil Corp., J. R. Irion 1-B (10-ac)	5600	3777
J. R. Irion 3-B (10-ac)	5500	3738
Tide Water Oil Co., Ras Pool 11 (65-ac)	7200	3741
Tysco Oil Co., Frederick 2-D (3-ac)	480	3645
Venable Oil Co. & McClanahan, Birdwell 24 (147.04-ac)	11,000	3629
Birdwell 34 (147.04-ac)	10,600	3629
KILGORE AREA—		
W. L. Allen et al, L. B. Morse 2 (3.11-ac)	7500	3618
Atlantic O. P. Co., M. B. Hughey 13-B (100.4-ac)	9100	3586
Barnsdall Oil Co., Dee Smith 2-A (5-ac)	7200	3559
Bay Oil Corp., Willis Smith 5 (19½-ac)	10,000	3560
Fred Birdsong et al, R. Jones 1	900	3698
Darby Pet. Co., C. O. Christian 14 (117-ac)	9600	3746
R. H. Dearing & McBride, John & F. Elder 1 (1.64-ac)	120	3542
Devonian Oil Co.-Gulf, Motley 34 (442.1-ac)	9000	3740
M. T. Flanagan Prod. Co., W. B. Walker-Tidal 1-A (91.3-ac)	7000	3574
Geir Bros. & T. I. Underwood, M. E. Minor 4 (30½-ac)	9300	3744
Gulf, M. T. Cole 19 (161.51-ac)	4600	3544
S. Hilburn 70 (80.74-ac)	6800	3598
S. Hilburn 83-C (68.95-ac)	8000	3644
Harcher Oil Co., R. H. Laird-Moses 2 (½-ac)	5800	3600
H. C. Hensley et al, Tom Bell-Tidal 1-B (7¼-ac)	3000	3707
M. J. Register 3 (3.6-ac)	†	1500
Humble, B. Laird 8-B-A (56.92-ac)	9400	3718
S. S. Laird 32-A (230-ac)	9000	3692
S. S. Laird 71-B (568.53-ac)	1500	3602
Invincible Oil Co., M. B. Weiss 17 (81.27-ac)	10,400	3521
Iowa Payne Oil Co., W. B. Walker 3 (42.33-ac)	5000	3661
Joe H. Long et al, M. Kennedy-Montgomery 1 (25.86-ac)	10	3650
Magnolia, M. T. Cole 13 (102.84-ac)	8800	3565
L. A. Griffin 17 (44.6-ac)	8000	3585
Elijah Protho 2 (5½-ac)	7500	3640
J. H. Merritt et al, D. Jones 1 (3.94-ac)	480	3663
Napolenic Oil Corp., D. Jones 1 (8-ac)	500	4638
Nat'l Oil & Grease Co., Adella Dixon 4 (14½-ac)	3600	3675
Y. Rogers & Rozel Oil Corp., H. Sexton 3-B (53-ac)	2000	3694
Shell, Rosa Russell 16 (126-ac)	7500	3758
J. B. Watson 57 (385.2-ac)	8800	3662
Smith & Strauss, Grif Davis 2 (4-ac)	8600	3665
Smith & West (W. & B. Oil Co.), R. Jones 1 (1.6-ac)	500	3661
Snowden & McSweeney Co., R. H. Laird 19 (133.1-ac)	9400	3587
Stanolind, L. B. Morse 4 (12½-ac)	8600	3649
Stodel Oil Co., Dee Smith 9 (20.06-ac)	7000	3630
Texas Canadian Oil Corp., C. Hilburn 3 (2¾-ac)	5000	3644
Tide Dater, E. Bivins 25 (200-ac)	8600	3628
LONGVIEW AREA—		
Amerada Pet. Corp., Cont'l State Bank 12 (98.3-ac)	7800	3600
L. R. Hearne 11 (108-ac)	8000	3513
Arkansas Drl. Co., Johnston-Barrier 2 (13½-ac)	4500	3659
Arkansas Fuel Oil Co., M. D. Allison 9 (59-ac)	9800	3604
H. Stephens 7 (57.7-ac)	9500	3619
Atlantic O. P. Co., W. P. Duncan 18 (154.7-ac)	10,300	3683
J. C. Judge 71 (455-ac)	10,500	3527
J. C. Judge 75-A (455-ac)	10,500	3519
J. C. McKinley 6 (32.07-ac)	6800	3656
Atlantic & Sun, M. Hays 60 (448-ac)	10,000	3520
Atlantic & J. K. Wadley, T. W. Lee 14 (110-ac)	11,000	3655
Ben G. Barnett et al, Bradshaw 1 (6¼-ac)	9500	3669
Bishop Oil Corp., E. G. Richey 8 (26.86-ac)	7200	3595
Cabot Carbon Co., L. Graves-Rio 7 (105.9-ac)	8800	3643
Clark & Cowden Drl. Corp., J. M. Christian 10-A (42¾-ac)	9500	3677
H. Clements 5 (22-ac)	5600	3558
O. Wilhite 4 (10-ac)	8700	3685
Empire Gas & Fuel Co., L. J. Rogers 9 (70.43-ac)	10,400	3609
J. L. Spurrier 8 (56-ac)	10,000	3612
Humble, H. M. Lawrence 19 (164.7-ac)	7200	3639
Thos. D. Humphrey et al, J. H. Thomas 7 (50-ac)	3600	3634
W. R. & H. A. Jones, R. P. Doby 5, (21½-ac)	7500	3714
Magnolia, Acey Christian 11-B (65.-95-ac)	5600	3660
F. W. Merrick, Inc., W. R. Nicholson 11-A (96-ac)	7000	3706
Mudge Oil Co., J. F. Bland 6 (32½-ac)	10,400	3758
Natchitoches Oil Corp., M. O. Sheppard 9 (32-ac)	8700	3590
Nathan Oil Co.-Geo. Culver, A. S. Victory 1-A (24.12-ac)	8000	3622
E. L. Walker 10 (40-ac)	4500	3572
Geo. L. Pace & G. P. Mitcham, A. D. Adkins 8 (51.7-ac)	7000	3770
B. F. Phillips et al, W. H. York 1 (½-ac)	7500	3587
Satellite Oil Co., L. M. Colburn 10 (36.85-ac)	9000	3568
Shano Oil Co., J. T. Hopkins 5 (25½-ac)	7000	3567
Shell, A. N. & V. King 17 (160-ac)	7300	3581
E. L. Smith Oil Co., E. A. Watts 10 (96-ac)	*	3653
Stanolind-Simms Oil Co., Fonville 10 (100-ac)	10,000	3558
Vera Oil Co., H. B. Owens 3 (50-ac)	7200	3831
Virginia O&R Co. (Walter Logan, Rec.), Harris 6-B (31-ac)	8000	3540
ANDERSON COUNTY (Cayuga Field)—		
Roeser-Pendleton, Inc., W. F. Wathen 1 (100-ac)	2500	4091
Tide Water & Texas Seaboard Oil Co., J. N. Edens 12 (988.6-ac)	3000	4060
VAN ZANDT COUNTY (Van Field)—		
Pure Oil Co., W. A. York 5 (50-ac)	10,000	2937
ANDERSON COUNTY—		
Gulf Prod. Co., O. G. Rogers 1	*	5772
HENDERSON COUNTY—		
Great State Oil Corp., R. Sid Ansley 1-A	*	3315
Taubert & McKee, M. T. Dodd 1	*	4049
HUNT COUNTY—		
H. G. Samson & Shawver, J. R. Phillips 1	*	2065
HARRISON COUNTY—		
Socagee Oil Corp., Mrs. Z. Abney 1, J. Lipscomb sur	sw	984

*Failures; †Junked; ‡Million cu. ft. gas.

pleted by Humble Oil & Refining Company on gas lift. This large number of non-flowing wells was partially due to independents venturing out upon the ragged edges of production along the east flank of the structure in Rusk County. The accompanying tabulation of completions reveals that 19 leases held by independents, varying from less than one-half acre to a reasonable size, received their first wells the past week.

Bottom-hole water blighted the prospects for a number of tests on the west and northwest flanks of the structure. In Smith County, Rhea L. Martin, Tyler, et al's D. E. Tyiska 1, SEc 10.27-acre lease, R. Wilson Survey, took in three feet of sand in drilling to 3839 feet, or 3342 feet below sea level, and was abandoned because of salt water. It is a north offset to Lane Drilling Company's A. T. Tyiska 2, which made a flowing well at 3327 feet sub sea. Lane Drilling Company's Tyiska 3 showed water in drilling to 3820 feet, or 3324 feet sub sea, but gives promise of making a commercial producer after plugging back about four feet. A. J. Sanders et al's F. Cole 1, situated west of the southwest corner of the D. E. Tyiska lease operated by Magnolia Petroleum Company, registered a flowing well from one foot of sand topped at 3852 feet, or 3313 feet below sea level. R. W. Cole et al's Georgie Moore 1, SEc 25.74-acre lease, D. W. Campbell Survey, same area, has cemented casing to test sand at 3871-3872 feet. It has a sub sea depth of 3335 feet, but absence of a straight hole may be responsible for oil sand being present below the normal water table.

Erratic water levels were reported in several tests drilled in Upshur County along the northwest edge of the structure. The Fla-Tex Corporation's J. T. Jones 5, SWc 57.9-acre lease, Wm. King Survey, encountered water in drilling to 3774 feet, and has been plugged back to 3771 feet. L. E. Merritt et al's Livingston Brawley-Salter 1, SEc 9.4-acre lease, Wm. King Survey, reported last week as giving promise of a minor extension producer, encountered salt water in deepening to 3814 feet. Bailey Gaunce et al's Eva O'Byrne-Humble 3, J. R. Watkins Survey, found salt water in sand at 3790-3795 feet, with a sub sea depth of 3336 feet, and will plug back to try and make a producer.

Bridwell Oil Company, Wichita Falls, failed in its attempt to overstep dry holes in the vicinity of Friars Switch, Rusk County, in drilling its Nora Elliott 1, SWc of 118-acre lease, Hugh Henderson Survey. Broken sand and shaley-lime logged at 3544-3587 feet, with an elevation of 452 feet, yielded about five barrels of oil when swabbed via casing the past week.

Wheeler County Well Flows Above Average

Pampa, Texas.—High production marks attained heretofore by wells completed from the granite wash formation in western Wheeler County were exceeded by a wide margin when Skelly Oil Company's D. E. Johnson 2, SWc S½ Section 47, Block 24, H&GN Ry. Survey, gave promise of earning an initial rating of about 10,000 barrels daily. The well flowed an average of 520 barrels of oil per hour for two hours, and was averaging 420 barrels hourly at the end of the sixth hour. Production was developed from shattered granite at 2437-79 feet and 2482-85 feet. The company's Johnson 2, a north offset to the above record producer for the county, averaged 2546 barrels oil and 15,000,000 feet of gas daily on five-day gauge from series of granite wash zones in drilling to 2480 feet.

Spectacular performance of the above two wells affords an important southeast extension for the prolific oil area, and followed closely after the completion of Smith Bros. Refining Company and Hanlon-Buchanan, Inc.'s G. W. Sitter 1, NEc W½ NE Section 33, or about half-mile to the west by south, rated at 3945 barrels oil and 20,000,000 feet of gas daily on five-day gauge from granite wash at 2532 feet. An aggressive drilling program for the immediate area is being launched, as such wells yield sufficient oil during their allowed five-day open flow potential gauge period to cover the cost of drilling and equipping the well.

Bell Oil & Gas Company's A. R. Evans-Gulf 2, situated on the east line of the NW Section 51, and on the northwest edge of this prolific Wheeler County area, failed to produce in commercial quantities, and has been abandoned at 2503 feet after drilling into salt water.

The Panhandle district scored nine producers and one failure the past week, with the former registering a combined initial yield of 8646 barrels of oil and 35,000,000 feet of gas.

North Texas Plants Now Are Operating

Wichita Falls.—All independent refineries in North Texas capable of being operated were reported processing crude late last week as result of competition from East Texas plants using illegally produced crude having subsided. A number of the North Texas plants are buying crude from majors paying the latter the posted price plus transportation and a marketing charge which is equivalent to a premium.

Texas Panhandle Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
GRAY COUNTY—		
Empire, M. E. Jackson 2	155	3273
Kewanee, R. E. Smith-Rest 8	460	3256
Skelly, H. Schafer 25-E	480	3329
HUTCHINSON COUNTY—		
Phillips, Johnson-Margaret 4	145	3102
Jordan 4	210	3021
Harry Stekoll et al, Whittenburg-Canadian 5-G	450	3000
Whittenburg-Canadian 6-G	250	3052
WHEELER COUNTY—		
Bell O&G Co., A. R. Evans-Gulf 2	*	2503
Skelly, D. E. Johnson 3	2550	2480
Smith Bros. Ref. Co. & Hanlon-Buchanan, G. W. Sitter 1	3945	2532

*Failures; †Junked; ¶Million cu. ft. gas.

North Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARCHER COUNTY—		
C. L. Abercrombie et al, Abercrombie-Taylor 1, blk 12	*	1408
L. T. Burns et al, E. E. Hildebrand 4, blk 143	75	1162
E. E. Hildebrand 5, blk 143	*	1161
C. R. Seals 1, blk 143	25	1165
A. E. Crenshaw & H. D. Lee, L. F. Wilson 18, sec 27	*	655
Cullum & Alexander, Falls 34, blk 19	20	1090
Falls-Scranton 13, blk 17	200	1123
FHE Oil Co., W. T. Richardson 4, sec 2424	45	1438
W. T. Richardson 5, sec 2424	13	1446
W. T. Richardson 7, sec 2424	30	1445
W. T. Richardson 8, sec 2424	15	1463
Gray Drl. Co., W. Ferguson 10, sec 2	*	669
W. B. Hamilton Pet. Co., A. D. Britton 1	*	1761
Cartwright 21	150	1147
N. H. Martin & Son, M. P. Andrews 1, sec 1825	*	1008
Peery & Boller, W. T. Richardson 2, sec 2424	150	1441
Perkins-Cullum Oil Co., C. L. Abercrombie 13, blk 157	25	1227
Falls County 161, blk 18	†	1110
Falls County 162, blk 6	80	1162
Falls County 163, blk 18	100	1111
Pet. Producers Co., Harmonson 17	*	984
J. T. Richardson 7-E, blk 1	150	1253
D. L. Wolf et al, W. Finley 1	*	702
BAYLOR COUNTY—		
Ray & Staniforth, W. H. Portwood 2-A, sec 1587	275	1394
CLAY COUNTY—		
Metzner & Burns, L. Thornberry 8, blk 6	9	339
COOKE COUNTY—		
F. W. Merrick, Inc., A. Knabe 1, blk 6	165	745
JACK COUNTY—		
A. P. Nicholson et al, Ida Shields 1	*	604
WICHITA COUNTY—		
L. Burns et al, T. Mitchell 19, blk 7	*	1567
Geo. W. Cooper et al, Waggoner Bros. 30, blk 13	*	1872
Dinsmore & Stipe, T. L. Burnett 7, sec 1	*	687
King Royalty Co., Waggoner Est. 5-J, sec 2	250	1565
Geo. Proctor et al, Geo. L. Dobie 2	*	1051
Wichita Prod. Co., Lillian Chilson 1	*	1885
YOUNG COUNTY—		
Brandenburg et al, Cullers 8, sec 2	*	580
S. D. Glover et al, C. W. Johnson 16, blk 10	5	523
Gorsuch Oil Co., O. Matthews 14	*	780
H. H. Gracey et al, T. Harmon 1	*	608
E. L. Kessler et al, Oliver Loving 1, sec 2794	*	916
Nash-Windfohr et al, Graham-Vick 17	90	2610
White & Duncan, H. Tucker 1, sec 180	*	1010
Wo-Mac Oil Co., Stephens-Roach 13	*	754

*Failures; †Junked; ¶Million cu. ft. gas.

West Texas Record Depth Test Reaches 12,664 Feet

San Angelo.—Gulf Production Company's McElroy 103, Upton County record depth test, logged gray lime in core taken at 12,664 feet late last week. It has not reached the Ellenberger lime or lower section of the Ordovician according to reports, although approximately 1315 feet of the Ordovician has been penetrated. The company is alternating in coring and drilling, cutting a hole 6 11/16-inches in diameter.

Development of the Harper-Cowden pool, Ector County, is scheduled to proceed on a steady basis as result of completion of a second producer a quarter mile to the east of Broderick & Calvert, Inc., and O. C. Harper's discovery well. International Petroleum Corporation and Harper's E. F. Cowden 1, C SE SE Section 25, Block 44, T&P Ry Survey T-2-S, flowed 250 barrels oil by heads during first 12 hours after shot of 740 quarts of nitro in lime at 4147-4333 feet. Bridge formed in the hole and a more accurate estimate on the well's crude yield will not be attainable until the obstruction is removed. The discovery well was completed in October, 1933. Both wells logged the lime pay zones at about the same sub-sea depths. The Oil Code Administration has approved a 12-well drilling program for the area in 1935. In all probabilites the land owners will force the drilling of this number.

Sid Richardson et al's J. B. Walton-Pure 1, Winkler County wildcat, has drilled to the 2900-foot level, carrying loaded hole to hold down gas production encountered in the upper section of the lime. It is an outstanding wildcat because of topping first brown lime section at 2115 feet, or 832 feet above sea level, thereby giving it the highest structural position recorded in the county. Location is about five miles northeast of the Sayre field, and equal distance southeast of the Scarborough-Llano field. Oil production is due near the 3100-foot level.

Encouraged by the high structural position occupied by Richardson et al's test, Gulf Production Company has moved in materials to drill two nearby tests on its Keystone Cattle Company leasehold, owing to lease contract expiring within four months. Keystone 1 is to be drilled in NEc NW Section 10, Block B-3, P. S. L. Survey, or less than one mile southeast of the wildcat now nearing a decisive level. Keystone 2 was located in NWc Section 17, Block B-2, P. S. L. Survey, or about 2½ miles further to the southeast. The three wildcats should be ample to determine the ability of the structure to produce.

Pecos County

Two new tests have been ordered drilled on the White & Baker ranch, Pecos County, where four dry holes have been drilled within as many months in trying to extend production from Gulf Production Company's White & Baker 3, SEc N½ Section 4, Block 207, T. C. Ry. Survey, which opened a new oil pool late last December flowing and pumping 30 barrels initial from lime at 1824-26 feet. International Petróleum Corporation and Cardinal Oil Company scored dry holes in drilling offsets to the south and southeast, respectively. The latter has made location for White & Baker 1, lease 2, SEc W½ Section 45, Block "Z", T. C. Ry. Survey, about two miles southeast of the producer and less than a half-mile northwest of Humble Oil & Refining Company's White & Baker 1, which was abandoned last June as a failure in the Ellenberger lime at 9811 feet.

Gulf Production Company added its second failure on the White & Baker ranch since making the discovery in completing White & Baker 5, NEc Section 88, Block 194, GC&SF Ry. Survey, last week in sulphur water at 2051 feet, and has moved machine to drill White & Baker 6 near C NW NW Section 94, Block 194, GC&SF Ry. Survey, three miles south of the latest failure and 3¼ miles southwest of the producer. The company had drilled one deep and one shallow test on the ranch prior to finding production, and White & Baker 4, situated one mile east of production, was abandoned last March.

Materials have been moved in for the drilling of a wildcat for the Dobbs Oil Company, Dallas, on the Jax Cowden ranch, southeastern Crane County, near center of 1120-acre block abutting the north bank of the Pecos River. Location is in the SEc N½ Section 38, Block 1, H&TC Ry. Survey, about 6½ miles southwest of nearest production. Geology on the area was furnished by Stanley E. Jay, San Angelo. This wildcat will test the dolomite, or big lime horizon near the 2250-foot level.

Scurry County

Magnolia Petroleum Company has made location for a wildcat to be drilled in northwestern Scurry County and on the east edge of a large block held for a number of years. Location is on the J. Wright Mooar land, being 1650 feet from the north and 990 feet from the east lines of Section 342, Block 97, H&TC Ry. Survey, or less than one mile south of a 4650-foot failure completed in April, 1930, by E. L. Smith Oil Company on the Mooar land, near C SE Section 379, after developing favorable oil showings in lime at the 2200-, 2500- and 2800-foot levels. Magnolia Petroleum Company paid $15,000 to E. L. Smith Oil Company for one fourth interest in the test and site and full interest in 680 acres when the first lime zone showing oil was encountered. C. T. McLaughlin, Wichita Falls, has temporarily shut down at 1795 feet in drilling W. C. Allen 1, near C NE Section 398, or about one mile north of the test drilled by the E. L. Smith Oil Company.

A block of about 12,000 acres has been leased by O. F. Dickenson, et al, Lamesa, Texas, to drill a 4500-foot test near center of north line of Dawson County. Location has been made on the C. H. Doak 217-acre tract, in east portion of Section 43, Block C-41, P. S. L. Survey. A portion of the block extends into Lynn County, where Edgar T. Hart and Wanete Oil Company have a wildcat on the C. O. Edwards ranch about ready to abandon after drilling to 4830 feet, showing salt and sulphur water in the lower lime.

West Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CROCKETT COUNTY (World Field)—		
A. R. Eppenauer Drl. Co., L. Powell 1-C	680	2557
ECTOR COUNTY—		
N. G. Penrose & Rowan Drl. Co., Kloh 1	*	4501
Stanolind, E. F. Cowden 6	63	4050
GLASSCOCK COUNTY—		
W. P. Luse & W. L. Pickens, Sam Turner 2	1240	2291
PECOS COUNTY—		
Phil Broun et al, Tippett-Humble 11	60	715
Cardinal Oil Co., Tippett-Kirby 33-E	320	616
Corvette Oil Corp., H. Monroe 17-B	217	518
Gulf, White-Baker 5	*	2051
SCHLEICHER COUNTY—		
W. C. Proctor et al, Judkins-Spencer 1	†	212
STONEWALL COUNTY—		
Merry Bros. & Perini, Inc. and Humble, C. L. Williams 1	*	3380
WARD COUNTY—		
California Co., B. D. Durgin 25	1018	2542
B. D. Durgin 26	962	2542
Gulf, Hutchings 40	741	2794
G. W. O'Brien 56	400	2789
WINKLER COUNTY—		
Sinclair Prairie, E. H. Cummins 3	290	2960

*Failures; †Junked; ¶Million cu. ft. gas.

Port Lavaca Wildcats Indicate Production

San Antonio, Texas.—Five wildcats in the Port Lavaca district, Calhoun County, are down to the sand and are giving indications of production. Although information is withheld, it is variously reported that The Texas Company's four tests are potential oil wells, casing having been ordered for each.

The Texas Company's Blardone 1, in the S. Shupe Survey, more than one and one half miles south and a fraction east of the discovery oil producer, is testing at approximately 6270 feet. It is considered to be safely above the water level. Same operator's R. Duelberg 1, M. Sanchez survey, more than a mile west and a fraction north of the discovery, is at a depth said to be 6276 feet, and is also testing. W. H. Wehmeyer 1, M. Sanchez Survey, one mile southwest of the discovery, is waiting on cement after making a satisfactory drill stem test. It is supposed to have drilled to 6336 feet, plugged back to 6259 feet and made a drill stem test at 6248-59 feet, where it sprayed oil into the derrick through ⅜- and ¼-inch chokes. Fifteen fourbles of fluid were recovered of which 80 percent was oil, the rest drilling fluid and mud. Casing has been set at 6251 feet. Nearly 4½ miles southwest of the discovery well, Texas Company's Martin 1, F. Garcia League, was coring at 6280 feet, but believed to be running about normal with the field. It is expected to make a producer.

Halliburton Oil Production Company's D. Burton 1, M. Sanchez Survey, due east offset to the discovery well, is bottomed at 6135 feet, where it is testing. This well is logged as being seven feet higher than the discovery, indicating that the apex of the structure likely is even farther east than the present development. This being the case, it is reasonable to believe that this will be one of the largest, if not the largest field thus far discovered in the Trans-Salt Dome Region of South Texas.

Pipe Line Project

The Texas Pipe Line Company also is reported to be preparing to immediately commence its pipe line project from Markham district to the new field. This line is to be a six-inch line and is said to be scheduled to be routed through the several producing areas along the coast between its present terminus and the Port Lavaca field which are now without trunk line outlets. This would mean possibly the Louise field in Wharton County, controlled by Pure Oil Company; Vanderbilt, Jackson County, Phillips Petroleum Company development; Keeran, Victoria County, completely controlled by Gulf Production Company; Placedo, Victoria County, new producing area just starting its development campaign; McFaddin, Victoria County, where The Texas Company recently completed a 6600-foot oil well. Just how these fields would be tied into the line is not known. It is possible that a trunk line will be routed straight to Port Lavaca with feeder lines from the other fields. There has been no definite announcement of The Texas Pipe Line Company's plans, hence all rumors are still a matter of speculation.

In any event, Port Lavaca takes on the appearance of a major strike. Drilling now in key locations is expected to bring about the rapid drilling of inside locations of the field. Crown Central Petroleum Corporation has staked four locations within the probable producing area, while Steinberger Petroleum Corporation, discoverer of the oil production, has staked two more. Adrian Moore is moving in for his first test. In addition, The Texas Company with approximately a score of leases to protect from expiration, is said to have staked additional locations, but they have not been definitely announced. Several locations have been staked in the town tracts, just north of the residential section of Port Lavaca and upon the completion of at least one more well in the field, they are expected to get underway.

The discovery well, Steinberger's Shofner 1, several days ago was reported to have been showing a trace of water while producing its allowable of 175 barrels per day. It was cut back to 163 barrels per day through ⅛-inch choke on tubing, showing a working pressure of 1650 pounds and closed in pressure on casing of 2000 feet pounds. The well made nine gallons of brackish water per day, but when 144 barrels under the same choke, the oil was completely cleared. A shake shows less than 1/10 of one percent B. S. and no water.

A number of rumors have been current of spectacular offers having been made for leases in the field. One was for a one-half interest in the Lavaca Oil Company's holdings, in which the purchasing company would drill one free well on each of the tracts held under lease by this company. Another was on the basis of $1,000 per acre for the entire spread.

Leasing Is Active In Victoria County

San Antonio, Texas.—A number of deals, including fairly large cash considerations, featured activity in the new Placedo area of Victoria County during the week. There were four active operations, two of which should be down to the producing horizon within several days.

Eastern States Company is said to have purchased one-half interest in 400 acres held by Costa Oil Company for a cash consideration of $100 per acre plus two free wells. In addition, the company bought a 50-acre lease a short distance north of the discovery well, paying $150 per acre, half cash and half in deferred oil payments.

Crown Central Petroleum Corporation purchased lease on 98 acres of the J. E. Schovajsa land, being Lot 15, Rupley Survey, southwest of the discovery, while Arkansas Fuel Oil Company purchased lease on the east 64 acres of Emil Kruppa tract in Lot 12, same survey, about a half mile south of the discovery well.

Considerable trading has been reported in the Placedo Junction townsite, small tracts bringing $70 and more per acre. Felmont Corporation took 13 acres, including all of Lots 1, 13, 14 and half of Lots 15 and 16. Pete Wiggins bought Block 52. Several other deals have been made, but are awaiting approval of title.

Costa Oil Company's Schovajsa 1, one mile southwest of the discovery well, is drilling at 3650 feet. Gillespie & Superior's Henderson & Pickering 2, three quarters of a mile northwest of the discovery, is fishing at 4808 feet. Magnolia Petroleum Company is moving in for Henderson & Pickering 1, an east offset to the discovery, while Gillespie and Superior's Brandt 1, a south offset to the discovery, is rigging up.

A late gauge on Gillespie & Superior's Henderson & Pickering 1, discovery well, was 173 barrels in 24 hours through 7/64-inch choke, with tubing pressure of 1700 pounds and casing pressure of 2250 pounds.

Five Important Strikes Made in Mirando District

San Antonio, Texas.—A barrage of new discoveries in the Mirando District of South Texas brought life to that sector last week in a most spectacular fashion. Five important discoveries were completed or sufficiently near completion to assure their success. Three were in Duval County, while the fourth and fifth were in Webb County.

The Two Sisters field, a Hockley sand area in northern Duval County, was opened.

Loma Novio field, a lower Government Wells sand pool in Duval County, was extended one and one half miles south, suggesting a vast producing area.

Hoffman gas area, Duval County, producing from upper Government Wells section, completed its first oil well.

Carolina-Texas field, Webb County, established production in the Queen City section of the Mount Selman formation, opening an important deep oil zone to development through the entire Jackson trend.

Cole field was extended more than a mile west into Webb County as the 2700-foot sand provided a new producer. This production is from about 100 feet below the Mirando sand, possibly the upper phase of the Pettus.

Loma Novio-Hoffman Trend

The Loma Novio-Hoffman trend is the most important development from an immediate development standpoint, but the Carolina-Texas strike is looked to as the forerunner of a drilling campaign of deep test on present known structures, both productive and nonproductive at shallower levels.

Referring to the accompanying map, Figure 2 indicates Tex-La Oil Corporation's M. C. Hubbard 1, NW SW Section 84, being drilled by Johnson Brothers. The well topped a sand section at 2789-95 feet, which was dry, but had oil sand from that point to 2802 feet, its total depth. Elevation is 685 derrick floor. A drill stem test showed 270 feet of oil and mud in 22 minutes and casing was set. Plugs have been drilled and the well is now being completed. This well established oil production along a north and south trend a distance of approximately five miles.

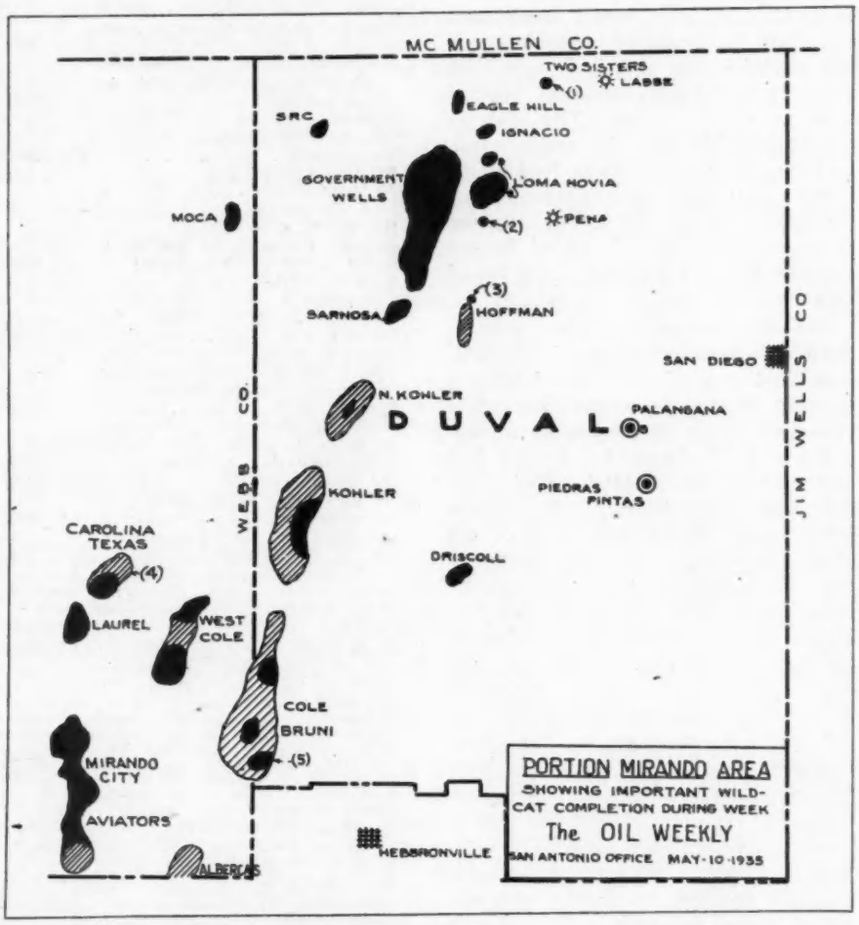
Carolina-Texas Oil & Gas Trusts' Benavides 11, in the Carolina-Texas field, Webb County, May 10, was flowing a large volume of gas, and spraying a fair quantity of distillate from 4993 feet. It is showing a closed-in pressure on casing of 1000 pounds with tubing pressure ungauged. Owners considering deepening it slightly to increase oil flow.

About six miles farther south, and only 660 feet north of Hoffman field gas production, Bridwell Oil Company's Sutherland 2, Section 122, (marked 3 on map) with an elevation of 660 feet derrick floor, had sand at 2701 feet, which tested 200 feet of oil in 21 minutes and is now being completed. This well, however, is in an upper lens of the Government Wells sand, while the Loma Novio production is slightly lower.

Bridwell Oil Company's Sutherland 2, May 10, was estimated as a 700- to 1000-barrel well through open casing from a total depth of 2718 feet. Expecting a low-pressure producer, on the basis of drill stem test showing, the well was swabbed through casing. Upon swabbing to about 2000 feet, it came in. Leaky connections were catheaded in and efforts were being made to kill the test preparatory to running tubing for final completion. Oil is 23 gravity at 82 degrees.

The consensus of opinion, however, is that the Hoffman-Loma Novio trend will close into one producing area, similar to the Government Wells field, just west. That field is made up of several sand lens on one structure. The Government Wells field is rapidly nearing the 800 mark in number of producers, so if this new trend is to compare with the former in size and importance, a heavy development campaign is in prospect.

The area shown on the map as Figure 1 is the discovery by Harvey and Henderson in Chernoskey 1, SW corner Section 226. This well has an elevation of 534 feet. It drilled to 2650 feet, after a completion showed some salt water along with the oil in the Hockleyensis. The well, however, was plugged back to 2226 feet and is com-



Map shows new strikes in the Mirando district of South Texas during past week

pleting in that sand, logged from 2220 feet. It is showing considerable oil, but not enough pressure to flow. The owners are installing pumping equipment, rather than swabbing to bring about the gas flow. It is possible that swabbing will break down the cement plug, allowing an influx of salt water. The test topped the Jackson at 1660 feet. Acreage is well broken up and an immediate development campaign is in prospect.

Carolina-Texas Field

Late in the week, Carolina-Texas Oil & Gas Trust's Benavides 11, SW NE Section 683, in the Carolina-Texas field of Webb County, was completing, showing considerable oil and gas. It was at 4993 feet with casing set to 4974 feet. The test had a sand and sandy shale section from 4932-74 feet, showing gas, and saturation in sand with a few streaks of shale from 4974 feet to the total depth. This is an old well, deepened from a former total depth of 3343 feet.

The well's completion brings about some very interesting complications. The Carolina-Texas field is one of the older fields of the Mirando district and many leases have been abandoned, or producing wells shut down due to their lack of profit. As a result, much stuff close into the probable producing area has doubtful title and it is said that attempts are being made in several cases to cancel leases. This also is the situation through the entire trend, land owners and operators looking to future deep development throughout the entire Jackson trend. The outcome of these suits, if not settled before actually brought to court, will be of great interest.

The fifth important discovery is in the form of an extension of the 2700-foot sand area of the Cole field, frequently referred to as the Seacord & O'Hearn pool. Magnolia Petroleum Company's G. Benavides 1, 330 feet southeast and northeast lines of block 255, Hale subdivision of the Arispe Grant, more than a mile west of the above production, is flowing better than 10 barrels an hour through ⅜-inch bottom-hole choke and open tubing at the top. With an elevation of 728 feet, derrick floor, it has the sand at 2765-73 feet. This well adds much acreage to the present field, which now has only a dozen oil wells. The Texas Company and O'Hearn and associates own some acreage between this producer and the older portion of the producing area, although Magnolia Petroleum Company is the major lease holder. The shallow gas sand covers the entire sector, but only a limited area has been developed in oil.

Five New Tests to Tell San Patricio Prospects

San Antonio, Texas.—Plymouth Oil Company has started three wells and is trying to complete a fourth, while Heep Oil Corporation has started a couple of tests on the Welder ranch in northern San Patricio County.

Plymouth Oil Company's Welder 3-C is located 1256 feet due north of the Welder 1-C, which recently opened a new field in that county. Welder 2-C is 1320 feet due east of the discovery well. Both are rigging. Same company is starting Welder 1-D, in the northwest corner of 1300-acre D lease, just southeast of Sinton field production.

Heep Oil Corporation's Welder 1-D, is located in the southwest corner of the 500-acre D lease. This corner is in turn the northeast corner of Plymouth Oil Company's A. lease, upon which the Sinton field discovery well was drilled. This well is listed as moving in rig. Northeast of this test and only a short distance southwest of Plymouth Oil Company's new field, Heep Oil Corporation's Welder 1-C, (shown by some as 1-E) is drilling at 4705 feet.

Plymouth Oil Company has been attempting to lower the tremendous gas pressure in Welder 3-A, one-half

South Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BEE COUNTY—		
Dirks Bros., Goree 1, 330 ft n of nw cor of Thurman sur, but in J. Taylor sur	*	4054
Paul Meaders et al, Keller 1, 330 ft nl and el of tr in Alcorte sur, sec. No. 28	*	3802
Leslie McKay et al, P. L. Campbell 1, blk 20, Campbell sub, B&B sur (West Tuleta)	250	3935
McAllister Fuel Co. (J. C. Puterbaugh), W. J. Vaughn 1, F. Lewis sur (Caeser)	650	3042
BEXAR COUNTY—		
Effie Weilbacher et al, A. Ernst 3, John Christopher sur	*	lcn.
DE WITT COUNTY—		
Sunray Oil Co. et al, W. Buehrig 1, 330 ft nl and el sec 7, T&NO sur	*	4105
DUVAL COUNTY—		
Al Buchanan & Blanco Oil Co., G. Ruiz Est. 2, sec 73, (Loma Novio N.)	375	2706
Conway & Buescher, A. H. Hoffman 2, 330 ft s and 330 ft e sw cor sec 120, but in sec 116, e of Hoffman field	*	3015
Government Wells Oil Co., Lundell 17, se nw ne sec 48 (Gov't Wells)	75	2292
Humble O&R Co., Ruiz Est. 4, sec 553 (Loma Novio)	325	2782
L. & R. Oil Co., C. W. Hahl 2, ne sw se sec 64, (Loma Novio)	*	2525
Magnolia, Duval County Ranch 42, sec 208 (Gov't Wells)	300	2324
C. W. Hahl 8C, se sec 61 (Gov't Wells)	70	2339
J. O. Wilson 14A, sec 134 (Gov't Wells)	¶2	2455
M. Ruiz Est. 8, sec 574 (Sarnosa)	65	2441
G. G. Mortimer, Peters Ranch 2-B, 330 ft nl, 2310 ft wl sw sec 196 (N. Kohler)	*	2711
Reynosa Oil Co., Duval County Ranch 9-B, e se sec 363 (Gov't Wells)	90	2290
Sun, Cuellar 7, sec 576 (Sarnosa)	65	2431
Texas, Bishop Cattle Co. 8, sec 135 (Gov't Wells)	100	2339
GUADALUPE COUNTY—		
Port Isabel O&G Co., Emil Leissiner 1, 600 ft nl, 150 ft wl of lease, Davis sur	*	1810
HIDALGO COUNTY—		
Ben G. Barnett et al, MP Ry. 1, por 41 (Samfordyce)	150	2756
Cortez Oil Co., C. E. Smith 1-B, tr 3-B, por 41 (Samfordyce) perf 2754-58 ft	500	2790
Hiriam M. Reed, C. E. Smith 2, sh 3-B, por 41 (Samfordyce)	*	2794
E. L. Smith Oil Co., A. F. Flores, 330 ft nl, 1803 ft el of sh 250, por 39, 5800 ft n Samfordyce production	*	3005
JIM WELLS COUNTY—		
O. W. Killam's W. D. Wade 5, 1885 ft sel, 1640 ft nel blk D, S. A. Agua Dulce gr (Sandia)	*	4201
Joe Lundin, C. T. Hewitt 1, 330 ft sl and el sec 51, R. Haldeman sur	*	4504
McMULLEN COUNTY—		
Texas Inland O&G Co., H. L. Lark 1, blk 133, Lark sub, Scrugham sur (Jacob)	75	991
Tri S Oil Co., L. Jacob Corp. 3, John Faddin sur (Jacob)	*	lcn.
REFUGIO COUNTY—		
Quintana Pet. Corp., Tom O'Connor 8-A, Swisher sur No. 4 (Tomoconnor)	1536	5876
Stanolind, J. F. Welder 3, J. T. McGrew sur (Greta)	400	4934
STARR COUNTY—		
Morris & Bryan, Hicks et al 1, 660 ft nl, 2000 ft el 500-ac tr, in e cor Pedernal gr	*	lcn.
VICTORIA COUNTY—		
Plummer Drlg. Co., J. Zimmer 3, R. Manchola gr (Coleto Creek)	100	2860
WEBB COUNTY—		
Associated Oil Co., A. M. Bruni 4, sec 7, Arispe gr (Cole Bruni townsite)	500	3390
French Oil Corp., R. Benavides 2-B, sw se se sec 661, (W. Cole)	100	2346
Gates Ranch Oil Co. (Thomas), A. Gates ,8 1320 ft nl and wl sec 59	*	1358
A. E. Gates 9, 2640 ft el, 330 ft nl sec 57	*	458
Magnolia, G. Benavides 1, 330 ft sel and nel blk 255, Hale sub, Arispe gr (Cole) 1 mi w 2700-foot prod	250	2773
Peerless O&G Co. & L. G. Seeligson et al, A. M. Bruni 3, sec 6, Arispe gr (Cole Bruni townsite) pb 3409	100	3413
Sun, A. M. Bruni 5, blk 20, sec 5, Arispe gr (Cole Bruni townsite)	*	lcn.
ZAPATA COUNTY—		
Texas, Measles 67, Cerrito Blanco gr (Escobas)	15	1206

*Failures; †Junked; ¶Million cu. ft. gas.

mile south of the discovery well of the Sinton field. It is showing 1400 pounds casing pressure and 1000 pounds tubing pressure through 3/16- and 1/16-inch chokes at 5457 feet. The well produces about six barrels of oil per hour, but the gas ratio is too high. It may be deepened.

Continental Oil Company and Atkins & O'Neil will make another attempt to develop the trend of production in the Angelita field, which thus far has provided only one producer, the discovery.

The new location is Welder 3, 466 feet south and 150 feet west of the southeast corner of the Anthony tract in the Juan Hart Survey, about three locations northeast of the discovery well. Still farther northeast, A. E. Masterson's W. A. Wurzback 1, standing at 5521 feet, is to be deepened. A deal is supposed to be near the closing point late in the week whereby one of the larger companies would take over the well and carry it to a lower level.

Refugio County Field Work Active

San Antonio, Texas.—Quintana Petroleum Corporation is running two rigs in the Tomoconnor field of Refugio County, where it has eight excellent flowing wells at below 5800 feet. Tom O'Connor 9-A is below 3250 feet, while 10-A is below 3175 feet.

Tom O'Connor 8-A, last completion in the field, is the best producer, flowing 64 barrels per hour through ⅜-inch choke and showing working pressure on tubing of 850 pounds and casing pressure of 975 pounds. It is bottomed at 5867 feet.

Greta field, same county, was extended one location north through the completion of Stanolind Oil & Gas Company's J. F. Welder 3, J. T. McGrew Survey, for an initial flow of 400 barrels per day through ¼-inch choke, showing 200 pounds working pressure. Elevation is 63 feet derrick floor, and the sand is logged at 4389-94 feet.

A wildcat in the county holding considerable attention is Magnolia Petroleum Company's Mattie Wood 1, S. Turner Survey, seven miles west of Refugio. This well is drilling at 6658 feet, but has been trying to blow out from gas sands encountered higher in the hole.

Humble Oil & Refining Company's Mrs. M. M. Marberry 1, J. Dunn Survey, on the Victoria County line, topped a sand at 4420 feet, which showed some saturation. Drill stem tests developed only a small amount of oil and mud and the test is drilling ahead, the last reports being 4489 feet in hard sand.

Mercedes Uplift Was Suggested by Salient

Mercedes, Texas.—The new oil and gas pool opened with the completion of Union Sulphur Company's American Rio Grande Land and Irrigation Company 3, Lot 2082, Section 86, six miles north of Mercedes, southeastern Hidalgo County, was first considered favorable by Tom E. Nolan of Mercedes, who had noted a group of low sandy ridges standing in the clay plain of the irrigated area of the Rio Grande delta. Oil and gas showings in a water well and in an abandoned test had interested Nolan, as had less definite reports of surface seepages and a sour water well.

Nolan called it to the attention of W. Armstrong Price, who recommended it for reflection seismograph survey to McCollum Exploration Company, after he had studied its surface geology and made physiography and reconnaissance magnetic surveys.

The surface seepages appear to have been marsh gas, air trapped in fissured clay by flood waters, and oily vegetable molds. A nearby salient in the contact between the Beaumont and the alluvium of the present Delta suggested the presence of a northwest-southeast axis of uplift near the prospect.

Recommendation of the area for reflection was based upon the oil and gas showings in wells northwest and southwest of the block; the possibility of a diagonal axis of uplift in the near-by Beaumont salient;[1] the preservation along the projection of this axis of the old sand-dune ridges from erosion by Rio Grande floods, while those around had been more completely washed away; and upon features associated with an apparently interrupted drainage course of the Delta. A magnetic anomaly also influenced the recommendation.

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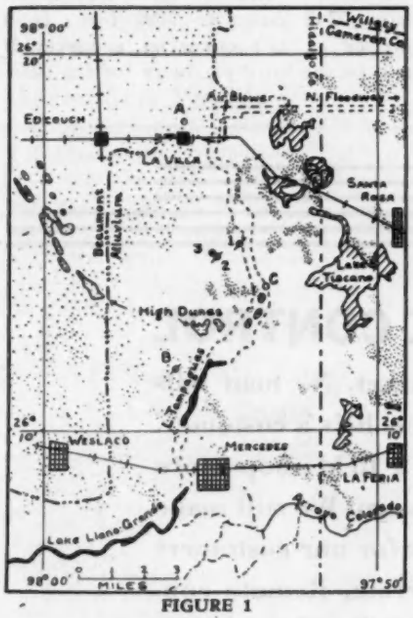

FIGURE 1

Contact between Beaumont Formation and Recent alluvium of Rio Grande overflow area, or delta, after Trowbridge, also showing sand and clay soils, sand dunes, shallow lakes (Tiocano Clay soil) and discovery oil and gas well of the Mercedes lease block of Union Sulphur Company.

Lake Tiocano is now drained. Fine stipple in east half of map represents low sandy ridges standing on clay or clayey silt, those north and west of Lake Tiocano have elevations of about 5 to 10 feet. North Floodway of Rio Grande is flanked by levees (indicated by broken lines northward from Lake Llano Grande) and includes the basin of Lake Tampaguas. Former course of drainage waters in Llano Grande-Tampaguas distributary may have led through small swamps south of Well C and thence east to Lake Tiocano.

Localities shown are: A, Joe Byrnes water well; B, old Mercedes Oil Company well, with oil show at 3078 or 3200 feet; C, sour water well in goat pasture; also the air-blower craters. Wells of Union Sulphur Company are Nos. 1, 2 and 3, the latter being the discovery oil and gas well.

Rio Grande runs at normal stages in its main channel four miles south of Llano Grande Lake.

The lease block lies between Lakes Tampaguas and Tiocano, La Villa and the Sand-Clay contact west of No.3 well.

Texas Permits Total 199 During Past Week

Austin, Texas.—Permits for 199 new wells were approved by the Texas Railroad Commission last week, slightly more than half the number allowed the week before.

East Texas was highest among the eight districts with 97 permits granted. There were 41 in Gregg County, 35 in Rusk, 15 in Upshur, four in Cherokee and two in Smith County.

The Gulf Coast area was second with 40 locations, of which 11 were in Harris County. In the adjacent southwest Texas district there were 22 permits approved with eight in Duval County.

West Texas listed 15 new permits, there were nine in the Panhandle and eight in West Central Texas.

pleting in that sand, logged from 2220 feet. It is showing considerable oil, but not enough pressure to flow. The owners are installing pumping equipment, rather than swabbing to bring about the gas flow. It is possible that swabbing will break down the cement plug, allowing an influx of salt water. The test topped the Jackson at 1660 feet. Acreage is well broken up and an immediate development campaign is in prospect.

Carolina-Texas Field

Late in the week, Carolina-Texas Oil & Gas Trust's Benavides 11, SW NE Section 683, in the Carolina-Texas field of Webb County, was completing, showing considerable oil and gas. It was at 4993 feet with casing set to 4974 feet. The test had a sand and sandy shale section from 4932-74 feet, showing gas, and saturation in sand with a few streaks of shale from 4974 feet to the total depth. This is an old well, deepened from a former total depth of 3343 feet.

The well's completion brings about some very interesting complications. The Carolina-Texas field is one of the older fields of the Mirando district and many leases have been abandoned, or producing wells shut down due to their lack of profit. As a result, much stuff close into the probable producing area has doubtful title and it is said that attempts are being made in several cases to cancel leases. This also is the situation through the entire trend, land owners and operators looking to future deep development throughout the entire Jackson trend. The outcome of these suits, if not settled before actually brought to court, will be of great interest.

The fifth important discovery is in the form of an extension of the 2700-foot sand area of the Cole field, frequently referred to as the Seacord & O'Hearn pool. Magnolia Petroleum Company's G. Benavides 1, 330 feet southeast and northeast lines of block 255, Hale subdivision of the Arispe Grant, more than a mile west of the above production, is flowing better than 10 barrels an hour through 1/8-inch bottom-hole choke and open tubing at the top. With an elevation of 728 feet, derrick floor, it has the sand at 2765-73 feet. This well adds much acreage to the present field, which now has only a dozen oil wells. The Texas Company and O'Hearn and associates own some acreage between this producer and the older portion of the producing area, although Magnolia Petroleum Company is the major lease holder. The shallow gas sand covers the entire sector, but only a limited area has been developed in oil.

Five New Tests to Tell San Patricio Prospects

San Antonio, Texas.—Plymouth Oil Company has started three wells and is trying to complete a fourth, while Heep Oil Corporation has started a couple of tests on the Welder ranch in northern San Patricio County.

Plymouth Oil Company's Welder 3-C is located 1256 feet due north of the Welder 1-C, which recently opened a new field in that county. Welder 2-C is 1320 feet due east of the discovery well. Both are rigging. Same company is starting Welder 1-D, in the northwest corner of 1300-acre D lease, just southeast of Sinton field production.

Heep Oil Corporation's Welder 1-D, is located in the southwest corner of the 500-acre D lease. This corner is in turn the northeast corner of Plymouth Oil Company's A. lease, upon which the Sinton field discovery well was drilled. This well is listed as moving in rig. Northeast of this test and only a short distance southwest of Plymouth Oil Company's new field, Heep Oil Corporation's Welder 1-C, (shown by some as 1-E) is drilling at 4705 feet.

Plymouth Oil Company has been attempting to lower the tremendous gas pressure in Welder 3-A, one-half

South Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BEE COUNTY—		
Dirks Bros., Goree 1, 330 ft n of nw cor of Thurman sur, but in J. Taylor sur	*	4054
Paul Meaders et al, Keller 1, 330 ft nl and el of tr in Alcorte sur, sec. No. 28	*	3802
Leslie McKay et al, P. L. Campbell 1, blk 20, Campbell sub, B&B sur (West Tuleta)	250	3935
McAllister Fuel Co. (J. C. Puterbaugh), W. J. Vaughn 1, F. Lewis sur (Caeser)	650	3042
BEXAR COUNTY—		
Effie Weilbacher et al, A. Ernst 3, John Christopher sur	*	lcn.
DE WITT COUNTY—		
Sunray Oil Co. et al, W. Buehrig 1, 330 ft nl and el sec 7, T&NO sur	*	4105
DUVAL COUNTY—		
Al Buchanan & Blanco Oil Co., G. Ruiz Est. 2, sec 73, (Loma Novio N.)	375	2706
Conway & Buescher, A. H. Hoffman 2, 330 ft s and 330 ft e sw cor sec 120, but in sec 116, e of Hoffman field	*	3015
Government Wells Oil Co., Lundell 17, se nw ne sec 48 (Gov't Wells)	75	2292
Humble O&R Co., Ruiz Est. 4, sec 553 (Loma Novio)	325	2782
L. & R. Oil Co., C. W. Hahl 2, ne sw se sec 64, (Loma Novio)	*	2525
Magnolia, Duval County Ranch 42, sec 208 (Gov't Wells)	300	2324
C. W. Hahl 8C, se sec 61 (Gov't Wells)	70	2339
J. O. Wilson 14A, sec 134 (Gov't Wells)	¶2	2455
M. Ruiz Est. 8, sec 574 (Sarnosa)	65	2441
G. G. Mortimer, Peters Ranch 2-B, 330 ft nl, 2310 ft wl sw sec 196 (N. Kohler)	*	2711
Reynosa Oil Co., Duval County Ranch 9-B, e se sec 363 (Gov't Wells)	90	2290
Sun, Cuellar 7, sec 576 (Sarnosa)	65	2431
Texas, Bishop Cattle Co. 8, sec 135 (Gov't Wells)	100	2339
GUADALUPE COUNTY—		
Port Isabel O&G Co., Emil Leissiner 1, 600 ft nl, 150 ft wl of lease, Davis sur	*	1810
HIDALGO COUNTY—		
Ben G. Barnett et al, MP Ry. 1, por 41 (Samfordyce)	150	2756
Cortez Oil Co., C. E. Smith 1-B, tr 3-B, por 41 (Samfordyce) perf 2754-58 ft	500	2790
Hiriam M. Reed, C. E. Smith 2, sh 3-B, por 41 (Samfordyce)	*	2794
E. L. Smith Oil Co., A. F. Flores, 330 ft nl, 1803 ft el of sh 250, por 39, 5800 ft n Samfordyce production	*	3005
JIM WELLS COUNTY—		
O. W. Killam's W. D. Wade 5, 1885 ft sel, 1640 ft nel blk D, S. A. Agua Dulce gr (Sandia)	*	4201
Joe Lundin, C. T. Hewitt 1, 330 ft sl and el sec 51, R. Haldeman sur	*	4504
McMULLEN COUNTY—		
Texas Inland O&G Co., H. L. Lark 1, blk 133, Lark sub, Scrugham sur (Jacob)	75	991
Tri S Oil Co., L. Jacob Corp. 3, John Faddin sur (Jacob)	*	lcn.
REFUGIO COUNTY—		
Quintana Pet. Corp., Tom O'Connor 8-A, Swisher sur No. 4 (Tomoconnor)	1536	5876
Stanolind, J. F. Welder 3, J. T. McGrew sur (Greta)	400	4934
STARR COUNTY—		
Morris & Bryan, Hicks et al 1, 660 ft nl, 2000 ft el 500-ac tr, in e cor Pedernal gr	*	lcn.
VICTORIA COUNTY—		
Plummer Drlg. Co., J. Zimmer 3, R. Manchola gr (Coleto Creek)	100	2860
WEBB COUNTY—		
Associated Oil Co., A. M. Bruni 4, sec 7, Arispe gr (Cole Bruni townsite)	500	3390
French Oil Corp., R. Benavides 2-B, sw se se sec 661, (W. Cole)	100	2346
Gates Ranch Oil Co. (Thomas), A. Gates ,8 1320 ft nl and wl sec 59	*	1358
A. E. Gates 9, 2640 ft el, 330 ft nl sec 57	*	458
Magnolia, G. Benavides 1, 330 ft sel and nel blk 255, Hale sub, Arispe gr (Cole) 1 mi w 2700-foot prod	250	2773
Peerless O&G Co. & L. G. Seeligson et al, A. M. Bruni 3, sec 6, Arispe gr (Cole Bruni townsite) pb 3409	100	3413
Sun, A. M. Bruni 5, blk 20, sec 5, Arispe gr (Cole Bruni townsite)	*	lcn.
ZAPATA COUNTY—		
Texas, Measles 67, Cerrito Blanco gr (Escobas)	15	1206

*Failures; †Junked; ¶Million cu. ft. gas.

mile south of the discovery well of the Sinton field. It is showing 1400 pounds casing pressure and 1000 pounds tubing pressure through 3/16- and 1/16-inch chokes at 5457 feet. The well produces about six barrels of oil per hour, but the gas ratio is too high. It may be deepened.

Continental Oil Company and Atkins & O'Neil will make another attempt to develop the trend of production in the Angelita field, which thus far has provided only one producer, the discovery.

The new location is Welder 3, 466 feet south and 150 feet west of the southeast corner of the Anthony tract in the Juan Hart Survey, about three locations northeast of the discovery well. Still farther northeast, A. E. Masterson's W. A. Wurzback 1, standing at 5521 feet, is to be deepened. A deal is supposed to be near the closing point late in the week whereby one of the larger companies would take over the well and carry it to a lower level.

Refugio County Field Work Active

San Antonio, Texas.—Quintana Petroleum Corporation is running two rigs in the Tomoconnor field of Refugio County, where it has eight excellent flowing wells at below 5800 feet. Tom O'Connor 9-A is below 3250 feet, while 10-A is below 3175 feet.

Tom O'Connor 8-A, last completion in the field, is the best producer, flowing 64 barrels per hour through 3/8-inch choke and showing working pressure on tubing of 850 pounds and casing pressure of 975 pounds. It is bottomed at 5867 feet.

Greta field, same county, was extended one location north through the completion of Stanolind Oil & Gas Company's J. F. Welder 3, J. T. McGrew Survey, for an initial flow of 400 barrels per day through ¼-inch choke, showing 200 pounds working pressure. Elevation is 63 feet derrick floor, and the sand is logged at 4389-94 feet.

A wildcat in the county holding considerable attention is Magnolia Petroleum Company's Mattie Wood 1, S. Turner Survey, seven miles west of Refugio. This well is drilling at 6658 feet, but has been trying to blow out from gas sands encountered higher in the hole.

Humble Oil & Refining Company's Mrs. M. M. Marberry 1, J. Dunn Survey, on the Victoria County line, topped a sand at 4420 feet, which showed some saturation. Drill stem tests developed only a small amount of oil and mud and the test is drilling ahead, the last reports being 4489 feet in hard sand.

Mercedes Uplift Was Suggested by Salient

Mercedes, Texas.—The new oil and gas pool opened with the completion of Union Sulphur Company's American Rio Grande Land and Irrigation Company 3, Lot 2082, Section 86, six miles north of Mercedes, southeastern Hidalgo County, was first considered favorable by Tom E. Nolan of Mercedes, who had noted a group of low sandy ridges standing in the clay plain of the irrigated area of the Rio Grande delta. Oil and gas showings in a water well and in an abandoned test had interested Nolan, as had less definite reports of surface seepages and a sour water well.

Nolan called it to the attention of W. Armstrong Price, who recommended it for reflection seismograph survey to McCollum Exploration Company, after he had studied its surface geology and made physiography and reconnaissance magnetic surveys.

The surface seepages appear to have been marsh gas, air trapped in fissured clay by flood waters, and oily vegetable molds. A nearby salient in the contact between the Beaumont and the alluvium of the present Delta suggested the presence of a northwest-southeast axis of uplift near the prospect.

Recommendation of the area for reflection was based upon the oil and gas showings in wells northwest and southwest of the block; the possibility of a diagonal axis of uplift in the near-by Beaumont salient;[1] the preservation along the projection of this axis of the old sand-dune ridges from erosion by Rio Grande floods, while those around had been more completely washed away; and upon features associated with an apparently interrupted drainage course of the Delta. A magnetic anomaly also influenced the recommendation.

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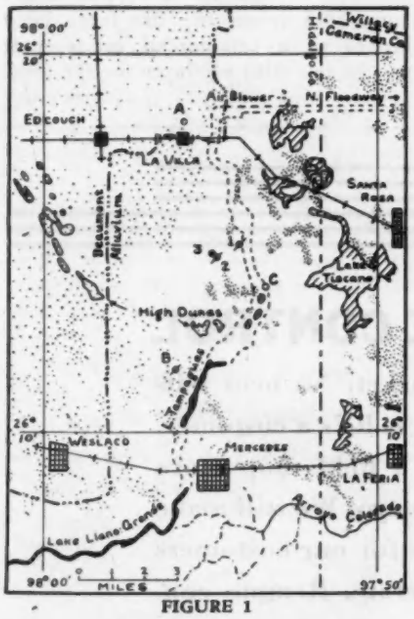

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Two Field Hearings Are Set for May 25

Austin, Texas.—The Texas Railroad Commission has set for May 25 hearings at Austin to consider rules for the drilling, spacing, completion and operation of wells in the Means field and the Loma Novia field.

Harris County

Houston.—Johnson & Johnson and Stanolind Oil & Gas Company's Fee Land 1, South Houston, Harris County, was reaming to straighten hole at 5069 feet at the close of the week, preparatory to setting 9⅝-inch casing.

The operators cored salt water sand from 4837 feet down to 5049 feet with salt water found from 5022 to 5049 feet. The operators are setting casing to shut off the water. The wildcat topped the Discorbis at 4500 feet and the Frio at 4745 feet.

Dickinson Field

Houston.—The next producer for the Dickinson field should be Turnbull & Irwin's Piazza 1, 250 feet south and 460 feet west of Humble Oil & Refining Company's Jones 1, J. S. Sherman Survey, Galveston County. The operators have started coring for the oil sand at 7960 feet. The well topped the Discorbis at 6520 feet, Heterostegina 6905 and the Marginulina at 7245 feet and is running about normal with Jones 1, or possibly a little lower.

Hardin County

Houston.—Kirby Petroleum Company spudded Kirby Lumber Company 3, Hardin County, with a water well rig during the past week. The well is located 9860 feet south of the north line and 233 feet west of the east line of James Stephenson Survey in the northwest corner of the county.

Anahuac County

Houston.—Humble Oil & Refining Company's Broussard 1, 466 feet out of the northwest corner of H. & T. C. Survey, Section 63, Anahuac field, Chambers County, was setting screen and liner to complete at the close of the week. The oil sand was found from 7018 down to 7099 feet. If it proves as a commercial producer it will be the third producer for the field.

13 Texas Coast Tests Are Finaled

Houston.—Completions along the Texas Gulf Coast during the past week totaled 13 and of that amount seven were producers with a daily output of 3623 barrels. The six remaining completions were failures.

Brazoria County

Houston.—After remaining shut down for some time Big Creek Oil Company's F. Truksa 1, south of Alvin, Brazoria County, was plugged as a dry hole at 6001 feet, below the contract depth. The test is located 330 feet south and east of the southwest corner of Rubin 15-acre tract in H.&T.B. Survey No. 7.

Van Vleck Field

Houston.—Skelly Oil Company made location for Cobb B-3 during the past week in the Van Vleck field of Matagorda County. The well is located 2325 feet northeast of Cobb 1 or 740 feet from the northwest line and 2900 feet from the southwest line of M. Cummings Survey. This makes the third well to be drilled in the area. The two former wells resulted in gas and distillate wells.

Old Ocean

Houston.—The second well to be drilled in the Old Ocean field of Brazoria County was announced during the past week when Harrison & Abercrombie staked location for Bernard River Land 2. It is 1000 feet north and 400 feet south of the discovery well located in the Charles Breen Survey A-46.

Batson Field

Houston.—One of the best producers on the southwest flank of the Batson field, Hardin County, was completed by John Deering during the past week. The well was Hooks 3 and it made 85 barrels per hour from 5643 feet. The flow was through a quarter-inch choke with a tubing pressure of 650 pounds. Seven-inch casing was set at 5576 feet.

Galveston County

Houston.—West of Dickinson in Galveston County, Coast Petroleum Corporation made location for Maco Stewart 1 at the close of the week. The wildcat is located 3416 feet south and 200 feet east of the northwest corner of 143-acre tract, lot three of Waterman subdivision of the W. K. Wilson Survey.

NO REMOTE CONTROL

We live with our market. No man tells us what to do — unless he's a customer. We started out with a field shop more than twenty-five years ago. We still make things and buy things for our customers right where they operate. Remote control may be OK in radio, but there's no such gadget on the PELCO chassis. If you operate where we do, let's get acquainted.

The PELCO Gang

PELICAN WELL TOOL & SUPPLY COMPANY

. . . . SHREVEPORT, LOUISIANA

Lake Charles—Converse—Many
Monroe—Houma—Kilgore
Willow Springs

Announce Anahuac and Hastings Development Plan

Austin, Texas.—The Texas Railroad Commission has issued new rules for operating in the Anahuac field, Chambers County, and the Hastings field, Brazoria County. The new regulations became effective on May 8.

The Anahuac rules call for 20-acre spacing with wells 466 feet from lease lines and 933 feet apart.

The allowable is based on acreage and potential with a maximum allowance of 25 acres to any one well.

In the Hastings order, 10-acre spacing is provided, which would allow wells to be drilled 330 feet from lease lines and 660 feet apart. Closer spacing was deemed advisable in this field because of the nature of the subdivisions, a large number of 10-acre tracts being individually owned.

The allowable in this field is also based on acreage and potential but in determining the acreage allowance, a maximum of 15 acres may be considered for any one well.

Proration in both fields is to be handled under the following formula:

$$\frac{\text{Acreage assigned to a well times the potential of the well}}{\text{The Sum of the products of Acreage and Potential factors for}}$$

all wells times the daily field allowable.

Mykawa Field Defined to North

Houston.—Alpha Petroleum Company's W. T. Carter 1, on the nort flank of the Mykawa field, Harris County, was abandoned during the past week at 5470 feet after testing salt water at that depth. This well defines the field in this direction. It is located 1320 feet from the east line and 200 feet from the south line of 220-acre tract in the Blas Herrera Survey.

Hamil & Smith have entered the Mykawa field, and are now rigging up Schap 1, W. Stinde Survey, to the north of the present activity. It is located 1225 feet north and 325 feet east from the southwest corner of the most southerly southwest corner of the survey.

New Gas Sand Is Found at Hastings

Houston.—In the Hastings field of Brazoria County, Stanolind Oil & Gas Company's Grote 1, 1000 feet north of Paul 1, has encountered a gas sand around 2924 feet. On a drill stem test the well showed 300 pounds pressure on a five-minute test. The test was made from sands in the Miocene from 2924 to 2957 feet through a quarter-inch choke on top and bottom. The well showed no water. After making the test the well was drilled to 3885 feet in shale and was drilling ahead at the end of the week.

Stanolind Oil & Gas Company now is constructing a field camp near the highway and also a warehouse.

New Production Sand Found in Walker County

Houston.—A new Wilcox producing sand was evidently found in Walker County during the past week when Boone Brothers' Texas Long Leaf Lumber Company 1-D, drilled into six feet of saturated oil sand from 3665 to 3671 feet and was preparing to make a test of the sand.

This new sand is approximately 700 feet lower than the producing horizon that is found in the Kittrell field of Houston County. The well is located to the east of the Kittrell field and is 330 feet each way out of the most northerly west corner of Mary Milsap Survey. It topped the Wilcox at 2877 feet.

It is reported in Angelina County, La Rue, who drilled a dry hole in this area some time ago is assembling a 3500-acre drilling block 11 miles west of Lufkin which centers around the David McCoy Survey. He has to date approximately 3000 acres and will drill the well to 3500 feet.

Ascension Parish

Lake Charles, La.—Humble Oil & Refining Company's Community 5, Darrow Dome, Section 33-10s-2e, Ascension Parish, was drilling below 5186 feet after attempting a drill stem test from 4747 to 4757 feet which showed oil. The tool slipped and the operators received 825 feet of salt water.

Texas Gulf Coast Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARRIOLA—		
Republic Prod. Co., Arriola 11 ...	*	4210
BATSON—		
John Deering, Hooks 3	2040	5643
DAMON MOUND—		
Gale Whitcomb, Wisdom 1-B.....	*	706
HASTINGS—		
Stanolind, Surface 1	312	6118
MANVEL—		
Commonwealth Oil Co., Nichols...	200	4005
Texas, Belcher A-11	600	5675
MYKAWA—		
Alpha Pet. Co., Carter 1	*	5470
RACCOON BEND—		
Humble, Reese A-4	216	4140
PORT NECHES—		
Texas, Orange National Bank 3...	100	4811
THOMPSON—		
Gulf, S. B. Gehr 2	155	5390
TOMBALL—		
Humble, E. Doege 3	*	5585
BRAZORIA COUNTY—		
Big Creek Oil Co., F. Truska B-1, s of Alvin, H. & T. B. sur No. 7	*	6001
JASPER COUNTY—		
Republic Prod. Co., Sabine Tram Co. 1, ne of Buna, H. & T. C. sur, sec 71	*	7615

*Failures; †Junked; ¶Million cu. ft. gas.

New Iberia Gets Another Dry Hole

Lake Charles, La.—Another failure was added to the New Iberia field, Iberia Parish, in search of the new deep sand which was discovered by Y. D. Spell's Bernard 1, when Harrison & Abercrombie abandoned Schwing 3, at 5519 feet. An interesting factor about this test is that it did not go into salt as the remaining failures did. The failure is located 100 feet east of the discovery well in Section 56-12s-7e.

The Meade Oil Company, of Tulsa, Oklahoma, took 1400 acres from an independent operator at Bull Isle. The leases were for free exploration work with a 90-day drilling obligation.

In St. Mary Parish, Louisiana Land & Exploration Company is reported to have taken 16,000 acres at Avoca Isle just south of Morgan City. The block was taken for 50 cents per acre for six months exploration work calling for $10 per acre upon selection with a minimum selection of 2500 acres. Five dollars per acre annual rental for five years. The deal also calls for a drilling obligation. There have been two other major oil companies dealing for the block.

Jasper County

Houston.—Republic Production Company's Sabine Tram Company 1, northeast of Buna, Jasper County, was abandoned during the past week at 7619 feet after testing salt water at that depth. The well had showings of gas around 7425 feet. It topped the Hockleyensis at 6107 feet, Warreni 5480 and the Heterostegina at 3502 feet. The wildcat is located 330 feet out of the northwest corner of Section 71 of the H.&T.C. Survey.

Active Lease Play South of Roanoke Pool

Lake Charles, La.—Humble Oil & Refining Company's Taylor 1, workover in the Roanoke field of Jefferson Davis Parish, was completed at 7830 feet, a plugged back depth, for 374 barrels per day. The flow was through a 12/64-inch choke with a tubing pressure of 1550 pounds; casing 2600 pounds. The same operator has made location for M. Kratzer 3, 1330 feet north and 440 feet west of the southeast corner of M. Kratzer 120-acre lease in Section 11-9s-4w.

One of the most exciting lease plays on the Gulf Coast is south of Roanoke in township 10 south range four west. This play has been in progress for some time. It started when The Texas Company dropped its large block in the area and Shell Petroleum Corporation leased the block. The latter concern is reported to

have paid $2.50 per acre, but another major oil company came in and the prices jumped to $50 per acre for several tracts with a number going at $25 per acre. Shell Petroleum Corporation took the block for three months geophysical work. Stanolind Oil & Gas Company is reported to be paying $5 per acre annual rental in the area on its holdings. Strake Petroleum Company took 2700 acres in the area and also Gulf Refining Company went in and took some protection acreage. Shell Petroleum Corporation is reported to have paid $30,000 for half interest for royalty under the Joe Sturdivant 3000 acres in its block.

Commercial Production Found at Lake Hermitage

Lake Charles, La.—The first commercial producer was added to the Lake Hermitage field of Plaquemines Parish when Humble Oil & Refining Company's La Fourche Basin Levee District 3, came in for 384 barrels of 32.1 gravity oil daily from sands found from 3161 to 3191 feet. At the end of the week the well was averaging 19 barrels per hour through a quarter-inch choke with 350 pounds on the tubing and 425 pounds on the casing. Seven inch casing was set at 3156 feet.

In St. Charles and St. John the Baptist parishes, Shell Petroleum Corporation is reported to have released a block in township 12 south and range 20 east. The company worked the area with seismograph reflection. Across the river an independent operator took 5000 acres for exploration work, paying 25 cents per acre for 12 months with leases calling for $2.50 on selection. It is rumored that the block will go to Shell Petroleum Corporation.

In St. James Parish royalty in the Convent area has reached a $40 per acre base. Some parties from Houston, Texas, bought half interest under several tracts in that area.

Three New Producers Completed at Bosco

Lake Charles, La.—Three new producers were added to the Bosco field of Acadia and St. Landry parishes during the past week. Oswego Oil Company was credited with one of the completions and Superior Oil Producing Company the other two.

The second well to be completed as a producer by Oswego Oil Company was Mouton 2, Section 34-8s-3e, 500 feet west of Mouton 1. The well made 45 barrels per hour from the Marginulina sands found from 8584 to 8598 feet. The bottom of the hole is 8606 feet. Seven-inch casing was set at 8575 feet. The oil flow was through a quarter-inch choke with 1400 pounds on the casing.

Superior Oil Producing Company's C. B. Hernandez 2, was completed in the Marginulina sands at 8583 feet for 281 barrels per day through a ten sixty fourths-inch choke while C. B. Hernandez 3, was finaled at 8575 feet from the same sands as No. 2 for 406 barrels per day.

It is reported Shell Petroleum Corporation is on a deal with Pure Oil Company for 5000 barrels of Bosco crude daily to be delivered at the Haymarket terminal, south of Lake Charles. It is understood Shell Petroleum Corporation will send the oil to Canada.

Royalty buyers are hot on two Acadia Parish blocks. One being Humble Oil & Refining Company's north Crowley block in township eight south and range one east and the other around Continental Oil Company's block in township seven south and range two west. Royalty in Continental's block brought as high as $220 per acre base. Continental Oil Company is preparing to start a well on its block.

It was reported some time ago that R. J. St. Germain of Houston, Texas, purchased 20 acres to the east of the Continental block but the report further states that Continental Oil Company paid the operator $100 per acre for the 20 acres.

North and east of Humble Oil and Refining Company's block an independent operator has taken 6000 acres for exploratory work for 50 cents per acre with $5 per acre on selection.

Easterwood Area

The Easterwood area started to create further excitement when a major oil company reworked the area with seismograph reflection. The block was originally taken for the major oil company by two Houston independent operators with the option of buying if geophysical work was successful. After working the area with torsion balance the major oil company turned the block down and after rechecking it offered the independent operators the same terms and were refused. At present there are three other major oil companies dealing with the independent operators for the block and have geophysical crews in the area now. Before the past week the highest price paid for leases in the area was $30 per acre but since the major oil company was refused the block they have started paying $50 per acre for several tracts with one thirty second override in royalty. The company took one 76-acre tract in the area paying as much as $2000 for the acreage and another 36-acre tract for $25 per acre.

Deep Test Holds St. Denis Interest

Lake Charles, La.—The possible discovery well for Jefferson Parish and the deepest producer along the Gulf Coast region was being completed when The Texas Company's Bayou St. Denis 1, six miles south of Lafitte, Section 19-17s-24e, commenced drilling plugs at 9572 feet.

The operators started pouring cement on the morning of May 6, 1935, after setting 7⅝-inch casing at 9558 feet. The possible discovery well should be completed at once.

In the same parish, Lincoln Oil Company's Rigaud 1, Grand Island prospect, Section 28-21s-25e, was completed as a dry hole at 7039 feet.

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REFER TO PAGE 305 YOUR 1935 COMPOSITE CATALOG

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HOUSTON, TEXAS

Sweet Lake Well Flows 35 Barrels Hour

Lake Charles, La.—Another producer was added to the Sweet Lake field of Cameron Parish when Pure Oil Company's Yount Lee 12, was completed for 35 barrels per hour of 27.7 gravity oil from 7363 feet after plugging back from 8196 feet. The flow was through a five sixteenths-inch choke with 675 pounds on the tubing and 795 pounds on the casing.

In Vermillion Parish and south of Abbeville it is reported that Stanolind Oil & Gas Company, after working with seismograph reflection, took 6000 acres paying as much as $35 per acre for several tracts with $2.50 per acre annual rental. The block centers around township 14 south and range three east. Another play has started around Stanolind Oil & Gas Company's block when an independent operator took several tracts paying as much as $25 per acre with $16 per acre annual rentals.

New Location Made On Henderson Prospect

Lake Charles, La.—The Texas Company has made location for St. Martin Land 7, on the Henderson Prospect in St. Martin Parish. The test is located 1322 feet north and 2052 feet east of the southwest corner of Section 9-8s-7e. The same operator's State Blum Bob 1, Henderson Prospect, St. Martin Parish, Section 9-8s-7e, is drilling at 7451 feet without encountering any shows.

In Terrebonne Parish, South Louisiana Gas Company is reported to have taken a block of 8700 acres south of Lake Quitman and has turned the acreage over to Dulac Oil Company. It is understood that the company has put approximately $60,000 in a New Orleans bank and is to announce the location for a well within the next two weeks. The block was taken on gas seepage.

The Texas Company is reported dealing for the South Down Plantation which is considered the Minor Estate of some 31,000 acres south of Houma.

Louisiana Gulf Coast Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BOSCO—		
Oswego Oil Co., Mouton 2	1125	8606
Superior Oil Prod. Co., C. B. Hernandez 2	281	8532
C. B. Hernandez 3	405	8575
CAMERON MEADOWS—		
Burton Sutton Oil Co., School Land 5	965	3337
CHOCTAW—		
Standard Oil Co., Myrtle Grove 6, (wo)	318	4414
GARDEN ISLAND—		
Texas Co., Garden Island Bay 15	*	3439
LAKE HERMITAGE—		
Humble, La Fourche Basin Levee District 3	384	3191
NEW IBERIA—		
Harrison & Abercrombie, Schwing 3	*	6505
ROANOKE—		
Humble, Taylor 1 (wo)	374	7830
SWEET LAKE—		
Pure Oil Co., Yount Lee 12	840	7363
JEFFERSON PARISH—		
Lincoln Oil Co., Rigaud 1, Grand Island prospect, sec 28-21s-25e	**	7039

*Failures; †Junked; ¶Million cu. ft. gas.

Eleven Louisiana Coast Tests Completed

Lake Charles, La.—There were 11 completions along the Louisiana Gulf Coast during the past week and of that amount eight resulted in producing wells with an initial production of 4692 barrels daily.

There are now 613 producing wells in the area scattered throughout 29 fields. The daily output of the 613 wells is reported at 104,500 barrels.

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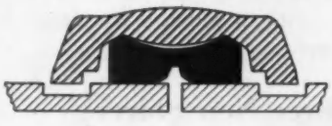

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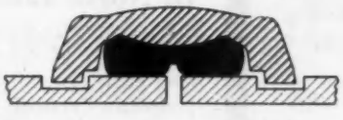

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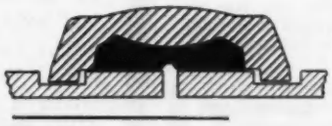

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New Sligo Field Pay Defined to the South

Shreveport, La.—The newly discovered 2800-foot gas producing horizon in the Sligo gas field, Bossier Parish, apparently was defined to the south and southwest last week when formation testers were run in two wells at that level and were dry. Both wells are drilling deeper for the 4200-foot gas horizon of the field. There are four 2800-foot horizon gassers in the field.

One mile southwest of the 2800-foot producing wells, Triangle Drilling Company's State of Louisiana 1, NW NW 23-17n-12w, having gotton no show at the 2800-foot horizon is drilling below 2935 feet, and three-fourths of a mile south of 2800-foot horizon production, United Gas Public Service Company's R. V. Kerr Unit 1, Section 24-17n-12, is drilling below 3392 feet.

In the Rodessa gas field, northwest Caddo Parish, United Gas Public Service Company last week was running liner to test Johnson 1, NE NE 26-23n-16w, an east edge well, at 5851 feet in the oolitic lime zone of the Glen Rose. In the same field in Section 16-23n-16w, the same company's Young 1, is drilling below 2140 feet.

De Soto Parish

Shreveport, La.—E. B. Bird and associates last week cemented six-inch casing at 2583 feet in A. D. Johns, Jr. 1, SE NW 20-14n-16w, De Soto Parish, in which a showing of six joints of oil in half a minute was reported when formation tester was run. Total depth, revised by steel line measurement, is 2613 feet; elevation is 290 feet. Base of Annona chalk was logged at 1907 feet and Nacatosh was topped at 1229 feet. The well will be drilled in within a few days. It is a wildcat.

Three New Starts In North Louisiana

Shreveport, La.—Three new locations, two of them in Caldwell Parish, east central Louisiana, near the Angelina-Caldwell Flexure were added to North Louisiana drilling reports last week.

The two new Caldwell Parish tests are G. W. Zeigen and associates' Louisiana Central Lumber Company 1, NWc SW SW 25-13n-3e, which is rigging; and Critchett and Woods' Louisiana Central Lumber Company 1, SEc NW NE 18-11n-3e, which has already spudded and cemented 10-inch surface casing at 133 feet. The other location was in the Urania shallow field, La Salle Parish, where production is found at 1520 feet in the Claiborne-Wilcox contact. This test is Monroe Production Company's E. Winberry 2, NE NE NW 18-10n-2e, which has spudded and is drilling below 700 feet.

Ruston Drilling Company (T. L. James and associates) of Ruston, Louisiana, are core drilling a block in Bienville Parish, on the east side of the Sabine Uplift on which they drilled Harrison 1, Section 2-16n-6w, to a depth of 3005 feet several months ago.

Twenty-Two Drilling Permits for Louisiana

Shreveport, La.—Twenty-two drilling permits were authorized last week by the minerals division, Louisiana Conservation Commission. Six were for North Louisiana divided among the following parishes: Bossier, one; Caddo, two; La Salle, one; Sabine, one, and Union, one. The sixteen for south Louisiana were divided among the following parishes: Acadia, one; Calcasieu, one; Cameron, three; Iberia, four; Jefferson Davis, one; La Fourche, four; St. Martin, one, and Terrebonne, one.

Shreveport, La.—Three miles north of the old Dixie producing field, Caddo Parish, that held the center of interest in North Louisiana for several months in 1929, A. F. Tarver, Shreveport operator, last week recovered four feet of an eight-foot core at 2420-28 feet in Tokio sand that was reported to have been saturated with oil. Six-inch casing will be set at top of the sand. The well is George 1, SW NE NE 23-19n-15w. The Dixie field produces from the Tokio at this level.

North Louisiana Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BOSSIER PARISH—		
Plain Dealing Synd., S. H. Bolinger Lbr. Co. A-1, se nw 31-23n-12w..	*	2804
SABINE PARISH (Converse)—		
Henry J. Brothers et al, L. E. Edwards 1, sw nw 29-9n-13w	*	2015
CADDO PARISH (Pine Island)—		
Barnsdall Oil Co., Fee 1, ne nw se 16-20n-15w	35	2258
Roy C. Colston, Thigpen-Herold 1, nw sw 15-20n-15w	55	2200
Murray Oil Co., J. S. Noel 1, nw sw 15-20n-15w	40	2191
Press & Lambert, Robertson 1, ne sw 15-20n-15w	15	2202
MADISON PARISH—		
Frazier et al, Frazier 1, ne ne se 23-17n-10e	†	3070
OUACHITA PARISH (Monroe)—		
Farrell & Co., State of La. 3, 21-20n-4e	¶10	2140
UNION PARISH (Monroe)—		
Carbons Consolidated, Hollis 1, sw se 10-21n-3e	¶1¼	2199

*Failures; †Junked; ¶Million cu. ft. gas.

Four New Tests Are Starting in Arkansas

El Dorado, Ark.—Four new locations were announced last week in Arkansas. In the Stephens field, Columbia County, Gold Oil Corporation has spudded and cemented 10-inch surface casing at 45 feet in B. Wepfer 1, SW SE NW 24-15-20. In Sevier County, Pendleton and Vaughn have derrick up for Fee 1, NW SE 35-9s-30w, on the same block with a test they have down to 1320 feet, Harris Estate 1, Section 34-9s-30, which now has a fishing job.

Two new locations were made in Union County, one for the Calion field and one for the Urbana field. The former is F. F. Roberts and associates' Calion Lumber Company 1, NW NW SE 10-16-14, where derrick is up; and the latter is Marine Oil Company's Union Sawmill Company A-3, NE SE SE 3-18-13, a location.

Alabama Lease Blocks Being Assembled

Mobile, Ala.—Twelve leases covering acreage in Greene County, Alabama, have been filed for record by A. R. Willis and R. F. Payne. The acreage is in townships 21, 22 and 23, north, range 1 east and 1 west. Some of the leases are for five and some for 10 years with 25 cents rental and some of the leases call for no rental due until November, 1936. It is reported that a 6000-foot test is planned on the block.

Arkansas Fuel Oil Company has begun dropping acreage in the block of approximately 55,000 acres it had under exploration contract in Washington County, Southwest Alabama, where core drilling was recently done. It is reported that 30,000 or more acres have been dropped.

A location is expected by May 15 on the 40,000-acre block recently assembled in Baldwin County, South Alabama, by Mrs. Mamie McCurry and associates of El Dorado, Arkansas. Joe Modisette of El Dorado has the drilling contract.

E. G. Nicar, magnetometer expert and geophysicist, employed by the Alabama State Geological Survey, who has been working in Clarke County for the survey, is now working in southern Monroe County.

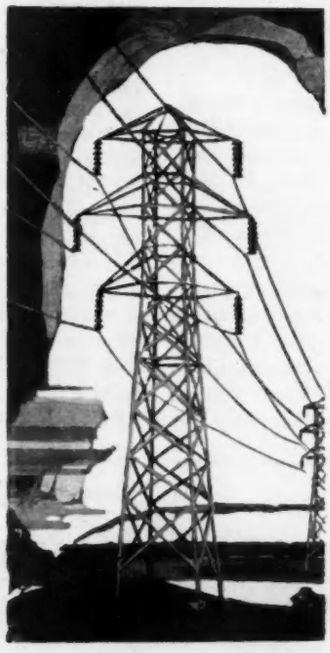
The Alabama State Geological Survey recently issued Bulletin 42 entitled "History and Work of Geological Surveys and Industrial Development in Alabama." The bulletin was prepared by Dr. Walter B. Jones, state geologist.

El Dorado, Ark.—Two drilling permits were authorized last week by the Arkansas Board of Conservation as follows: Calhoun County, The Hunter Company, Shreveport, Stout Lumber Company 1, 563 feet north and 150 feet east SWc SW NE 33-16-13; Union County, H. L. Hunt, Incorporated, El Dorado, Arkansas, E. F. Gregory 16, center NE SE SW 10-17-14.

Arkansas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MILLER COUNTY (Garland City)—		
Ed Donahue et al, Beck 2, se se 33-15-26	300	2923
OUACHITA COUNTY (Camden)—		
Kraft Oil Corp., Rath & Cartier 1, sw sw 32-13-17	*	1852
UNION COUNTY (Rainbow City)—		
Alice-Sydney Oil Co., E. F. Gregory B-2, sw nw sw 10-17-14	35	3386
Lion Oil Ref. Co., E. F. Gregory B-1, sw se ne 10-17-14	*	3701
H. L. Rowland 6, ne ne 15-17-14	*	3427
H. L. Rowland 7, nw ne ne 15-17-14	*	3282
UNION COUNTY (Urbana)—		
Urbana-Union Oil Co., Union Sawmill Co. B-1, nw sw 34-17-13	*	4214
UNION COUNTY (Hibank)—		
Reuter Oil Co., Inc., Kinard 1, nw se nw 32-18-14	6	2196
Vines 2, sw sw se 29-18-14	18	2216
LITTLE RIVER COUNTY—		
M. E. Sanderson, A. E. Hale 1, sw se se 22-12-29	*	2104
OUACHITA COUNTY (Smackover)—		
L. L. McDonald, J. A. Robertson 1, nw ne nw 25-15-16	10	2075

*Failures; †Junked; ¶Million cu. ft. gas.



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South Texas Fields Are Receiving Outlet Facilities

(*Continued from page 84*)

Additional outlet locally is being provided through the enlargement of present refineries and the construction of new plants. Ralph E. Fair, of Dallas, an East Texas operator, is said to be interested in the Mirando-Port Isabel pipe line project, in addition to considerable refinery development in the area. He is associated with Capt. J. F. Lucey, also of Dallas, who has been in the Rio Grande Valley some time investigating the situation. They jointly operate the Associated Pipe Line Company in the East Texas field.

Fair and associates recently acquired the controlling interest in Rado Refining and Producing Company's 150-barrel crude skimming plant in McAllen and is preparing to double the capacity through the installation of a cracking unit.

He and his associates also are planning to construct another refinery somewhere on the new ship channel near Port Isabel, the plan to have a capacity of possibly 3000 barrels per day. It will be a cracking unit to handle the Samfordyce and other crudes.

Several other refinery projects have been started along the Mirando trend, including one at Bruni townsite, another at Samfordyce, and still several more are in the rumor stage in Harligen and other Rio Grande Valley points, but nothing definite on the latter plants is available.

National Scouts Meeting Has Good Program

Corpus Christi, Texas.—Several hundred oil scouts and others interested in the oil industry will gather at Corpus Christi, May 20 and 21 to discuss the past year's developments and new engineering achievements. The event will be the annual convention of the National Oil Scouts Association of America, Ind.

This organization is composed of oil operators and scouts for oil companies over the entire nation.

Plans for the meeting include a number of technical papers as well as a host of entertainment features.

The Plaza Hotel has been selected as headquarters for this meeting. Registrations will be made at this hotel May 20 from 7 to 9 a. m. The meeting will be called to order at 9:30 a. m.

Following the address of welcome and other preliminary discussions, there will be a general report on activity in the South and Southwest Texas district, outlining the major discoveries of the year and the trend of development in various wildcat and producing areas. This portion of the oil producing world has come to the front during the last several years and is now a major factor in the industry.

The technical papers to follow will include such subjects as methods of completion of both oil and gas wells, advancements in various kinds of equipment for both drilling and production, new testing and logging devices, etc.

Officers for 1935-1936 will be elected at this meeting.

One of the important features of the meeting will be the delivery of the National Oil Scouts Association of America, Inc. Year Book, now in the process of publication.

LaBarge Field

LaBarge, Wyo.—The Texas Company started a well in the LaBarge field here this week. The new operation, the only test active in the light oil field of western Wyoming, California Petroleum Corporation Lease 4-K, southwest corner SE SW 34-27n-113w, is drilling at 105 feet with cable tools.

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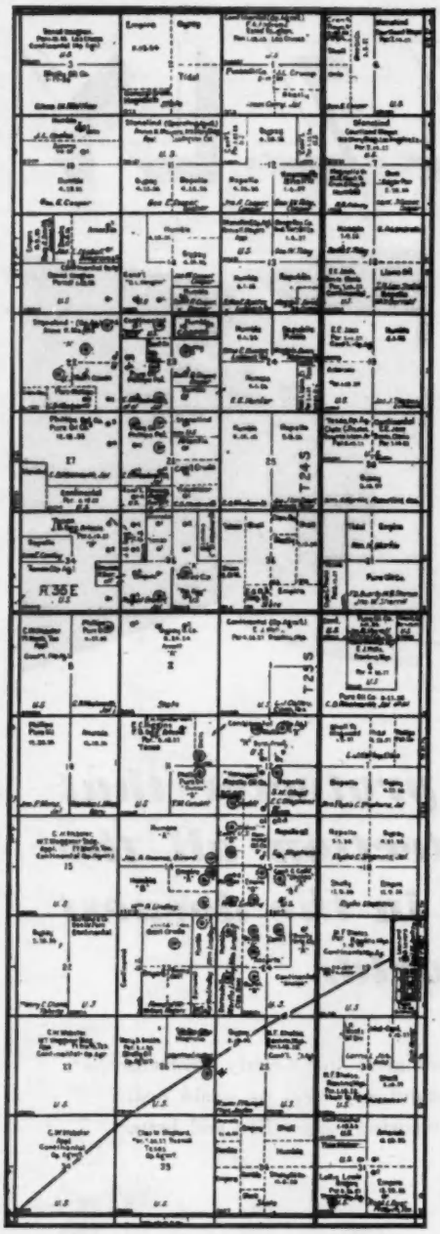
Cooper Drilling Slow Because of Water Intrusion

Hobbs, New Mexico.—New development activity in the Cooper field, third ranking source of production for Lea County and the state, threatens to become restricted largely to necessary offsets until progress is made in checking the intrusion of sulphur water into the porous lime horizon yielding prolific oil wells near the 3500-foot level. Separate committees of engineers and geologists have been pressed into service to try and locate the source of the water, which has penetrated into various levels of the structure. Proration restrictions have been rigidly respected since the field was uncovered in April, 1934, with individual well allowables tapering off from a top allowable of 225 barrels daily to a low mark of 145 barrels daily for the last period in April. The allowable was raised to 146 barrels beginning May 1.

The Cooper field has 45 completed wells, and 13 of this number are making water, including several that are showing from 30 to 40 percent cut oil in producing the allowable. Gypsy Oil Company's Cooper 1, C SW NE 23-24s-36e, an early completion on the east flank of the structure, is producing about 2000 barrels of fluid in making its crude allowable. It showed water in completing at 3580 feet, or 229 feet below sea level. A survey of the lime section indicated that the water was from above, or between two pay zones. The company has used tubing packers, and other methods to try and rid the well of its water. Humble Oil & Refining Company's A. E. Thomas 1, C SW SE 23-24s-36e, recently started producing oil and is allowed 75 barrels daily, or its maximum output. It was completed as a gasser last November after plugging back from sulphur water at 3602 feet, or 262 feet sub sea, to 3470 feet. A complete water shutoff was obtained.

Traces of oil saturation developed by Repollo Oil Company's B. W. Arnold 1, SWc NW SE 11-20s-38e, wildcat situated about five miles south of the Hobbs field, in drilling to 4628 feet, or 1061 feet below sea level, has resulted in the company treating the lime with 3000 gallons of acid solution. The outcome of this treatment had not been determined at the close of the week.

Early completion of a second test for the Monument area, single wildcat strike scored in Lea County this year, is scheduled for Amerada Petroleum Corporation's State 1-F, C SW SW 36-19s-36e, a north offset to its discovery well. Formation tester used at 3785-3892 feet yielded a small show of oil and gas, with hole bottomed at a sub sea depth of 298 feet, as compared to a sub sea completion depth of 355 feet for the discovery well. The company plans to core and test at intervals to select a casing point below the big gas zone and above the main oil horizon so as to try and attain a well balanced gas-oil ratio upon completion. Offsets to the discovery well slated for immediate drilling by Shell Petroleum Corporation and Superior Oil Company (Cal.) are due to get under way shortly. The Texas Company has erected rig for the drilling of its Saunders 1, C SW SE 18-19s-37e, situated about 3½ miles northeast of the discovery well of the Monument area. This is on a federal permit, and was allowed by the Secretary of Internior because of being isolated. However, no locations on government permits for the Monument area proper will be approved until a plan of development is filed and passed upon by the Oil Code Administration.



—Map courtesy Zingery Oil Map Co., Fort Worth.

Linking of the Cooper and North Jal fields, Lea County, New Mexico, shown in the above map, awaits the closing of a 1½-mile gap. Wells producing sulphur water with oil are indicated by a circle.

The townsite section of the Hobbs field has yielded another big producer from a doubtful location. Shell Petroleum Corporation's B. H. Turner 1, SWc NE¼ 34-18s-38e, earned an initial rating of 13,488 barrels oil and 14,700,000 feet of gas flowing through open tubing and casing after alternate injections of 2000 and 6000 gallons of acid solution in lime at 4165-4220 feet. The well has a sub sea depth of 590 feet, and was given an allowable of 171 barrels daily. J. P. Cusack, Inc. obtained lease on the E. H. Byers 160-acre tract, situated on the south side of the Hobbs townsite section of the field, from Continental Oil Company, and is drilling the first test 2310 feet from the east and 660 feet from the north lines of 3-19s-38e.

Kevin-Sunburst

Kevin, Mont.—One new test was spotted in the Kevin-Sunburst field, Toole County, where there are seven tests underway at nominal depths. The new operation is Montex Petroleum Company's Fee 1, SE SW 27-34n-1e, moving in material.

Hardin, Mont.—A group of business men here have formed the Daniels Petroleum Company and are selling royalty spreads over acreage the company holds in the Hardin gas field to finance the drilling of a first deep test to explore for oil on the Hardin structure, Big Horn County. Gas is developed at around 800 feet in the field, which extends through the town here where several small gas wells have been completed by local citizens for their individual use.

Wyoming Wildcat Strike Rated Greatest in Years

Medicine Bow, Wyoming.—Greatest Wyoming wildcat strike since Salt Creek came in late Thursday when Ohio Oil Company and The California Company Kyle 1, NE SE NE 26-31n-79w, Big Medicine Bow, Carbon County, eight miles southwest of here flowed 165 barrels of 63 degree gravity crude through drill stem seated at 5299 feet on top Second Bench Sundance sand with total depth at 5361 feet. Well will complete in both benches of Sundance sand; braden heading off 36,000,000 cubic foot flow of gas developed first bench of Sundance at 5151-5206 feet around seven-inch casing set at 5159 feet. Ohio and California companies hold jointly 7000 acres of land embracing the structure, which has closure of 2700 feet. California Company is Rocky Mountain operating subsidiary of Standard Oil Company of California. Big Medicine Bow is six miles due south of Allen railhead on Union Pacific.

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Cut Bank Operations Increased to 26

Cut Bank, Mont.—Operators in the Cut Bank field, Glacier County, started three new tests this week, bringing the total of drilling wells in the field to 26.

Santa Rita Oil & Gas Company is moving in material for two wells, Government 1, NEc SW 4-32n-5w, and McCabe 1, NWc SW 28-33n-5w. Nadeau Bros. are rigging up for Coover 2, NEc NE 17-35n-5w.

The Texas Company's Hinkle 6, NE NE 2-34n-6w, which looked like a disapointment a week ago when it had only 1800 feet of oil in the hole from a total depth of 2811 feet, swabbed 90 barrels the first day, 72 barrels the second day, and is pumping 70 barrels daily.

Deep Test Planned For Lance Creek Area

Casper, Wyo.—A deep test to explore for oil through the Sundance formation on the semi-proved East Lance Creek structure, Niobrara County, Eastern Wyoming, is scheduled to start drilling within the next 60 days. B. J. Irwin of Cheyenne assembled a block of acreage on the structure, and turned it to Black Hills Refining Company, which will drill the test.

The block embraces 7,699.66 acres of government permit land, held by 14 permitees. Location for the test will be SE SW 22-36n-64w, on a permit held by W. W. Wright. Test probably will be drilled with rotary equipment, and will go to 5000 feet if necessary to penetrate the Sundance, according to D. J. Lingenfelter of Aztec, New Mexico, of Black Hills Refining Company, who was in Casper, representing his company in the transaction.

Black Hills Refining Company recently was organized as a corporation under the laws of California and is financed by California capital. J. W. Cole of Cheyenne is president, Lingenfelter, vice president, and A. Gould, of Los Angeles, secrtary-treasurer. The company plans building a refinery in the Black Hills region of South Dakota, as well as the exploration on East Lance Creek.

Several weeks ago Ohio Oil Company developed a 3600-barrel well in Rohlf 2, first test in the third bench of

the Sundance sand in the Lance Creek field proper. One well is producing around 80 barrels of oil per day on East Lance Creek from the Dakota sand. It is four miles east of the nearest production and is operated by Argo Oil Company.

New Mexico Wildcat Shows 20 Barrels

Aztec, N. M.—A surprise shallow strike of high gravity oil was developed this week in Bennet & Lingenfelter's Lark 1, NW NW 29-20n-9w, a wildcat on the Red Mountain structure, 80 miles south of here in McKinley County, New Mexico. The wildcat encountered a 20-barrel showing of 42.5 gravity oil at 470 feet, and was running rods and tubing to test production. If the well holds up to estimates, operators plan drilling several shallow wells, and trucking the crude to Aztec Refining Company's skimming plant here. Aztec Refining Company is headed by D. J. Lingenfelter, joint operator, who is drilling the test. After developing shallow production operators plan to drill a deep test of the structure.

Mountain States Completions

WYOMING

Company, Well and Location	Init. Prod. Bbls.	Depth
CONVERSE COUNTY—		
R. J. Dilger, Government 1, se ne sw 33-31n-72w	*	1085
BIG HORN COUNTY—		
Peay Oil Co., Denio 1, Tract 43, 15-55n-97w	115	3225

COLORADO

MOFFAT COUNTY—		
Stanolind Oil & Gas Co., Shaw S-D 4, ne nw ne 27-4n-92w	1850	3464

NEW MEXICO

BERNALILLO COUNTY—		
Norrins Realty Co., No. 1 Gallegas Grant, cnw nw 19-11n-4e	*	lcn.
Norrins Realty Co., Pajarito 2, sec. 22-9n-1e	*	386
DONA ANA COUNTY—		
Mid-State Oil Co., Baretz 1, sec 14-26-5e	*	lcn.
Viking Oil Co., State 1, sec 26-23-5e	*	900
EDDY COUNTY—		
Price, State 1, sec 15-16-23	*	902
GUADALUPE COUNTY—		
Bellview, McMillan 1, sec 24-5n-16	*	4717
LEA COUNTY (Cooper Field)—		
Texas, I. B. Ogg 1-B, c se se 34-24s 36e	2000	3513
LEA COUNTY (Eunice Field)—		
Continental-California, A. E. Meyer 2-A-18, c nw se 18-21s-36e	2000	3919
Skelly, State 2-B, c sw nw 16-21s-36e	2500	3902
Tide Water, et al, State-Foster 4, c ne ne 8-21s-36e	486	3887
LEA COUNTY (Hobbs Field)—		
Shell, B. H. Turner 1, swc ne 34-18s-38e	13,488	4220
LEA COUNTY (North Jal Field)—		
J. G. Hammond, Inc., M. F. Sholes-Conoco 1, nec e½ nw 13-25s-36e	2000	3257

*Failures; †Junked; ¶Million cu. ft. gas.

New Montebello Area To Get New Drilling

Los Angeles.—The extension test on the easterly end of the old Montebello field, drilled by Universal Consolidated Oil Company, which showed for 2100 barrels of 37 gravity oil, cut from 10 to 25 percent, has been killed and 8⅝-inch casing recemented.

This semi-wildcat was completed May 1, at 5503 feet with 8⅝-inch pipe cemented at 5425 feet. The mud and water is thought to be coming in around the shoe. The recementing job consisted of forcing 25 sacks of cement around the shoe.

The last production before the well was killed was 350 barrels of 37 gravity oil in 12 hours, cut five percent. It was flowing through a ⅜-inch choke and there was 450 pounds pressure on the tubing and 1100 pounds on the casing. It was making 1,250,000 cubic feet of gas.

The showing of the new well caused a new flurry in leasing circles and the new area is assured of several tests. The Texas Company's City of Whittier 1 in the new area is now drilling 700 feet and Wilshire Oil Company has leased 83.4 acres formerly held by H. T. Coffin and will start a well as soon as possible.

North American Oil Consolidated has leased 100 acres in the new area and the lease calls for the drilling of a test if The Texas Company obtains production.

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23 Wells Active in Playa Del Rey Field

Los Angeles.—With 23 wells actively drilling in the Playa del Rey area of the old Venice field, and others getting ready to start, operators are worried over the lack of storage facilities. Some of the late completions are forced to choke back their wells until arrangements can be made to get the oil moved.

The new area is located within the city limits and fairly close to a residential district. City ordinances forbid any storage tanks, other than flow tanks, on the leases and also forbid the moving of oil out of the field in tank trucks and trailers. There is only one pipe line operating out of the district, and it is owned and operated by Union Oil Company. Reports are current that another line will be built, but so far no steps have been taken to this end.

It is apparent that wells in this field will be curbed, and little if any hot oil can be expected. One operator in this field has been enjoined in federal court from producing in excess of his allotment and authorities indicate that other suits will be filed if the need arises. Since hauling out of oil in tank trucks is against the law, the field can do little else than play the game.

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The next completion probably will be Dunlap Petroleum Company's No. 1, which stopped drilling at 6701 feet in oil sand and has cemented 6⅝-inch casing at 6460 feet. Lor-May Oil & Developing Company's No. 1 test also is bottomed at 6701 feet and has cemented 6⅝-inch pipe at 6650 feet, taking in less formation than the Dunlap hole.

Union Oil Company has cemented 6⅝-inch casing string at 6030 feet in Vidor 9 with bottom at 6207 feet. Oil sand was topped at 6161 feet. . The Petrol Corporation is redrilling Del Rey 1 at 5863 feet with old bottom at 6820 feet.

Another interesting test is that of Raymond J. Rasmussen's edge well which is drilling at 6975 feet, after picking up an oil sand at 6953 feet. Seven other holes are drilling below 5000 feet.

New Huntington Beach Wells Cost $25,000

Los Angeles. — Independent operators are being attracted to the Garfield area of the old Huntington Beach field and wells are being drilled to completion in about 30 days at a cost ranging from $25,000 to $30,000. The drilling is fairly easy and most of the wells now being drilled are bottomed at about 3800 feet, taking in only 200 to 300 feet of pay formation.

In the older days, Huntington Beach wells usually produced from 1600 to 1200 feet of oil sand, broken with shale ledges, but intermediate water broke in to the great injury of the wells. The new wells produce pipe line 25 gravity oil.

Stevco Oil Company some weeks ago completed No. 1 in this area for 200 barrels and the allotment is 78 barrels a day. Stevco Petroleum Company is starting a well at once and Seaforth Oil Company is building derrick for its first test.

Kettleman Is Source of Much Natural Gasoline

Los Angeles.—Of the total of 44,512,131 gallons of natural gasoline manufactured in California in March, Kettleman Hills plants were credited with 14,705,676 gallons, almost one-third for the state. Seven plants were operating at Kettleman Hills and processed 12,013,508,000 cubic feet of gas.

Santa Fe Springs, where seven plants are operating, came third with 4,865,076 gallons made from 2,828,432,000 cubic feet of gas. At Ventura Avenue, five plants made 3,793,321 gallons of natural gasoline and 11 plants at Long Beach produced 6,613,924 gallons.

Total of 92 plants were operating in the state during March and these plants treated 28,878,740,000 cubic feet of gas.

Long Beach Continues Most Active in State

Los Angeles.—Long Beach is by far the most active field in California, but the most recent drilling campaign is expected to slow down very considerably within 90 days, since new wells are now being completed for much smaller flush production than during January.

During the week ending May 4, a total of five new producers averaged only 270 barrels to the well and only three produced pipe line oil. The day of the 1000-barrel producer seems to be in the past. Most of the new holes are being completed at 4200 to 4600 feet and are being drilled on small drilling sites.

At the close of the week mentioned, 43 strings of tools were busy, with the holes at various stages. Most of the drilling wells are new holes, but a number are redrilling and several are nearing the completion stage. Eighteen new rigs are up and seven new wells are to start drilling within a few days.

Seven new locations appeared on the last scout reports, and five of these are classified as "No. 1" holes, indicating the companies are each drilling the first test for the field.

Kettleman Hills Edge Tests Near Completion

Los Angeles.—Two edge tests at Kettleman Hills, North Dome, are reaching a stage when they will soon tell their story. Kettleman North Dome Association's No. 36-36Q, in Section 36-22-18, on the southeast edge, tested mud and salt water and no oil, after plugging to 9064 feet from 9075 feet. It is possible other tests will be made.

Same association's No. 56-8Q, in Section 8-22-18, on the north edge of the south portion of the field, has been redrilled to 10,138 feet, with old bottom at 10,154 feet. When old bottom is reached, it is expected the hole will be taken to a still greater depth in search of the oil zone.

Association's No. 8-20J, in Section 20-21-17, stopped drilling at 8661 feet, and walls are now being scraped. String of 9⅝-inch pipe was cemented at 7695 feet.

Standard Oil Company of California's No. 21-29J, in Section 29-21-17, is rigging up to complete with bottom at 8695 feet and with 9⅝-inch casing at 7660 feet. The seven-inch was perforated at 7681 to 7807 feet, at 7888 to 8093 feet, and at 8239 to 8690 feet. No. 45-35J, in Section 35-21-17, stopped drilling at 9345 feet and seven-inch is being perforated at four points. String of 9⅝-inch pipe was cemented at 7550 feet.

Twenty-four strings of tools are busy on the North Dome and only one well is drilling on the Middle Dome. At least seven new wells will start drilling in the field during May.

California Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BELRIDGE—		
Standard, McPhail 1-A	1200	8600
KERN FRONT—		
Geo. F. Getty, Grady 4	250	2115
MOUNTAIN VIEW—		
Hogan Pet. Co., Porter Day 5	2500	5927
Shell, Baurenburg 1	520	5786
MOUNT POSO—		
Shell, Vedder 22	390	1874
Vedder-Rall 7	1450	1937
Union, S. & M. 22	1125	1865
ROUND MOUNTAIN—		
Honolulu Oil Corp. No. 35	1025	2211
VENTURA AVENUE—		
Shell, Gosnell 36	160	7000
LONG BEACH—		
Alum Rock Oil Co., No. 1	300	4600
Kiowa Oil Co., No. 2	550	4160
St. Louis Oil Co., No. 2	25	5380
Sentinel Oil Co., Mastodon 1	385	4270
Twentieth Century Oil Co., No. 1	90	4710
HUNTINGTON BEACH—		
Associated, Dennison 3	140	4449
Concord Oil Co. No. 3	150	4195
MONTEBELLO—		
Universal Cons. Oil Co., N-2	1920	5503
SANTA FE SPRINGS—		
General, No. 37-B	460	3916
EDISON—		
Consolidated Crude Corp., Bloemer-Jeppi 1	*	5567
A. T. Jergins Trust, Dougherty 7	200	1600
Gilmore Oil Co., Stockton 1	*	1990
WHEELER RIDGE—		
Reserve O&G Co., Tejon Ranch 2	*	2508

*Failures; †Junked; ¶Million cu. ft. gas.

Michigan Land Sale

Mt. Pleasant, Mich.—Of 6000 acres of state owned land offered by the Conservation Department for oil and gas lease May 6, a total of 3580 acres were sold for a total bonus price of $9181, or an average of $2.56 per acre.

With the exception of the 167 acres in Ogemaw County, all of the lands sold were listed as wildcat. The proven acreage brought $5315 and was bought by H. C. Nelson of Muskegon.

Associations Opposed

Mt. Pleasant, Mich.—Michigan's two oil and gas associations this week had split over the proposed legislation for state control of oil and gas production. The Oil and Gas Association of Michigan led a fight for the passage of the bill in the state legislature while the Michigan Independent Oil and Gas Association protested against its passage at a public hearing before the House May 2.

The House bill was drawn much like the recently passed New Mexico state control bill. The bill is expected to go to the floor of the House for a vote within two weeks.

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Montcalm-Gratiot Area Michigan Interest Center

Mt. Pleasant, Mich.—Nineteen tests were active this week in the Montcalm-Gratiot district, 10 rigs were either up or building with a total of 63 locations making the area the center of interest in present Michigan development.

Taggart Brothers' Smith 1, 10n-5w-1, a half-mile east of the Leonard-Durbin discovery well, Montcalm County, had reached 2510 feet on May 7 but was making such slow drilling time in the shale break between the Red Rock and Traverse lime that it may be standardized by the last of the week. Cable tool equipment had been moved in on May 7 but the operators sought to keep the rotary going and if possible complete the hole to the Dundee, about 3200 feet. They should pick up Traverse lime between 2600-2800 feet.

The Taggart-Smith test is the first deep test projected in Michigan with rotary tools and for this reason it has been closely watched by the drilling branch of the industry. Slow time in the shale, ordinarily the fast drilled formation with cable tools, probably will not enable the operators to cut much from cable tool time on this particular test.

Sun Oil Company resumed drilling May 7 on Hines 1, 17n-1w-31, Gladwin County, after a four-day fishing job for the drill stem, lost after drilling 127 feet in the Dundee lime. At 90 feet and 112 feet in the formation oil and gas shows were reported. M. F. Whitehill's Spicer 1, 17n-2w-11, Gladwin County, was to test the Dundee formation this week. It is a south offset to a 70-barrel discovery well.

Michigan Proration Unchanged for May

Mt. Pleasant, Mich.—Crude oil production in Michigan for April totaled 1,119,000 barrels according to State Proration Committee figures announced this week.

While the Porter district was the chief area of production with 843,942 barrels in April, the Leonard-Durbin discovery well in Montcalm County, 10n-5w-11, accounted for 122,000 barrels during the month.

No change will be made in the state proration schedule for May with the April set up of a 75 barrel per well exemption and a 25 percent prorate applicable this month.

The state potential was set at 68,000 barrels as of May 1.

Michigan Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MIDLAND COUNTY—		
Columbia Oil & Gas Co.'s Taulker 5, 14n-1w, sw ne sw-7	100	3548
Northern Oil Co.'s Hathaway 4, 13n-1w, nw ne nw-18	60	3425
Pure Oil Co.'s Peek 5, 13n-1w, se se nw-16	290	3425
Kleinhams 7, 13n-1w, nw nw ne 20	100	3422
Rex Oil Co.'s Howland 2, 13n-1w, sw sw nw-23	55	3418
Stork Oil Co.'s Hill 4, 13n-1w, ne se ne-22	95	3423
Sun Oil Co.'s Miller 8, 13n-1w, ne ne sw 16	285	3429
Great Central's Scott 1, 14n-2w, se se nw-8	50	3572
Mid State's Bolen 1, 14n-2w, nw sw ne-16	38	3590
Howard Patterson's Haskins 1, 13n-ne-16	38	3590
ISABELLA COUNTY—		
Wittmer Oil Co.'s Ervin 1, 15n-4w, ne sw-13	*	3785
Isabella Oil Co.'s Failing 1, 15n-3w, ne ne sw-33	*	3674
Arbaugh Brothers' Aldrich 1, 14n-6w, ne se-22	*	1085
Michigan Citie's Crowley 1, 14n-6w, se se-3	2¼	1370
Youmans & Dalton's Wheelock 1, 15n-6w, nw ne-31	*	1671
MONTCALM COUNTY—		
Prudential Oil Co.'s Hanson 1, 11n-6w, ne nw-1	¶3½	1356
SAGINAW COUNTY—		
Smith Petroleum Co.'s Palberg 3, 10n-6e, sw nw se-20	15	1540
OGEMAW COUNTY—		
Wiser Oil Co.'s Horne 1, 22n-2e, ne ne se-19	75	2721
Wells & Molloy's Moss 1, 22n-2e, sw sw sw-20	95	2759
Morris Van Kuren's Fisk 2, 22n-2e, ne se se-20	90	2725
LAPEER COUNTY—		
Hadley Oil Co.'s Haplin 1, 7n-9e, se ne ne-26	*	1344
Fred Craft's Gerwolds 1, 8n-9e, ne nw ne-9	*	1428
CLINTON COUNTY—		
Elba Duplain Co.'s Stratton 1, 8n-1w, nw nw ne-4	*	3044
MUSKEGON COUNTY—		
Reed Oil Co.'s Fagan 1, 10n-16w, sw ne sw-10	*	1915

*Failures; †Junked; ¶Million cu. ft. gas.

Eastern States Completions

CENTRAL OHIO

Company, Well and Location	Init. Prod. Bbls.	Depth
LORAIN COUNTY—		
R. E. Gain, Isabel Gain 1	¶	1015
MEDINA COUNTY—		
J. A. Price, R. O. Bowman 1	*	411
HOLMES COUNTY—		
L. S. Finley, L. S. Finley 1	*	888
MUSKINGUM COUNTY—		
C. O. Moore, Lenitilley 2	¶	718
COSHOCTON COUNTY—		
E. J. Edman, Chas. McCoy 1	¶	890
TUSCARAWAS COUNTY—		
John Marks, John A. Hart 1	¶	1191
GUERNSEY COUNTY—		
M. Hardwick, F. W. Gray 2	¶	592
Geo. Jewell & Co., A. & E. Henderson 1	¶	1360
Morgan & Walters, A. F. Rose 1	*	1502
Frame Bros., J. W. Fupton 8	*	425
J. T. Roach, J. Rose 6	*	1566
Geo. Jewell & Co., J. W. & I. L. Warehime 1	¶	1326
Frank Lyons & Co., Z. Rich 1	¶	1286
Ferguson & McCullough, H. B. Winnett 1	*	1311
W. Salladay &Co., Paul Micha 7	¶	1397
FAIRFIELD COUNTY—		
City Nat. Gas Works, D. Steiger 1	¶	2040
ATHENS COUNTY—		
Gross & Frebault, Alva Verity 2	¶	560
MEDINA COUNTY—		
Ohio Fuel Gas Co., Semko Ostaff 1	¶	3128
E. R. Edson & Son Co., E. G. Miller 56	5	485
MEIGS COUNTY—		
Ohio Fuel Gas Co., M. Bush 1	¶	1950
Meigs Developing Co., Philson 1	¶	2018
MEDINA COUNTY—		
O. K. Oil & Gas Co., Henry Essig 66	*	386
COLUMBIANA COUNTY—		
Union Gasoline Oil Corp., Wm. Jenkins 1	¶	4543
BELMONT COUNTY—		
Union Gasoline Oil Corp., Nick Diken 2	5	1776
GUERNSEY COUNTY—		
Mike Hardwicke, F. W. Gray 2	¶	592
George L. Kernodle & Co., H. C. Colley 6	*	1167
HOLMES COUNTY—		
Ohio Fuel Gas Co., Alonzo Bucy 1	¶	3231
STARK COUNTY—		
East Ohio Gas Co., L. & L. Roush 2	¶	4432
East Ohio Gas Co., J. & C. Albright 2	¶	4206

SOUTHEASTERN OHIO

Company, Well and Location	Init. Prod. Bbls.	Depth
COLUMBIANA COUNTY—		
Union Gasoline & Oil Corp., Wm. Jenkins 1	¶	4543
WASHINGTON COUNTY—		
C. H. Vaughn & Co., C. & A. Vaughn 5	1	416
WASHINGTON COUNTY—		
Turney & Co., Myron Leasure 25	5	536
D. T. Orndorff, Phillip Roe, Jr. 5	*	1531
Ridgeway & Patterson, Jacob Beltz 2	5	1274
Harry Binegar, L. C. Moore 6	¶	1967
NOBLE COUNTY—		
T. & C. Rich, E. W. Hutchinson 3	*	1342
MONROE COUNTY—		
R. B. Decker & Co., J. & H. Gillespie 4	*	1667

WEST VIRGINIA

Company, Well and Location	Init. Prod. Bbls.	Depth
CALHOUN COUNTY—		
Boyce Fowler & Co., Loman Fowler 1	¶	2079
HANCOCK COUNTY—		
R. J. Braden, Phillips 1	*	1055
KANAWHA COUNTY—		
Cambridge Gas Co., Wm. Compton 2	¶	3375
PLEASANTS COUNTY—		
M. C. Martin, Carder 1	10	....
RITCHIE COUNTY—		
W. R. Hays, Levi Wilson 4	¶	2103
ROANE COUNTY—		
H. Jarvis & Co., J. S. Rogers 2	¶	1323
TYLER COUNTY—		
Smith & Kearns, Ripley 1	1	....

KENTUCKY

Company, Well and Location	Init. Prod. Bbls.	Depth
OHIO COUNTY—		
J. C. Miller &Co., J. Edward Smith 11	50	....
Mecca Oil Co., J. T. Smith 12	100	....
Ohio Oil Co., A. G. Phister 8	20	....
Lowman & Co., Joe Dodd 3	15	....
Cumberland Pet. Co. & Co., R. Richards 21	*	....
Dr. Denton, Dr. Denton 1	¶	....
J. C. Miller & Co., Martha Webster 2	15	....
Cumberland Pet. Co. & Co., G. Richards 7	*	....

*Failures; †Junked; ¶Million cu. ft. gas.

Drilling Reports on Important Wildcats

CALIFORNIA

KERN COUNTY

ALPAUGH—Trico O&G Co.'s No. 4, 3-25-23, rigged and sd.

ARVIN—General's Mattson 1, 1-32-29, dr sandy shale 3225 ft. Hall-Baker Co.'s Core Hole 4-4, 16-31-30, pumping water little oil, 1270 ft.

BELRIDGE — Continental's Maylan 1, 7-28-20, dr sand and shale 3255 ft.

BUENA VISTA LAKE—Shell's B. V. A. 1, 9-32-25, td 6112 ft, to set casing 6000 ft for test.

CALIENTE—Signal O&G Co.'s S. P. Land 1, 31-29-30, sd 2290 ft. Woodward Oil Co.'s Batz 1, 36-29-29, fsh 616 ft; S. P. Land 2, 31-29-29, td 497 ft, pumping 25 bbls 19 gravity oil, to co.

COMANCHE POINT — Tejon Ridge Oil Co.'s No. 1, 23-32-29, dr 1840 ft.

EDISON — Mountain View Dev. Corp.'s Spangler 1, 12-30-28, fsh 5122 ft. Woodward Oil Co.'s Goldberg 1, 36-29-29, lcn.

GREENFIELD—Big McKittrick Oil Co.'s Houghton 1, 7-31-28, dr shale 5970 ft.

KERNELL—Standard's Rideout 1, 34-24-23, rig; Widgeon 1, 1-25-23, testing 2870 ft; Widgeon 2, 12-25-23, rig.

LOST HILLS—Standard's United 1, 2-26-20, dr sand and shale 3575 ft.

SEMITROPIC—Fullerton Oil Co.'s No. 27, 14-27-23, lcn; No. 76, 1-27-22, lcn. Standard's Goldman 1, 5-27-23, wocs 13⅜ in bottom; Towle 1, 7-27-23, rig.

SOUTH DOME—Continental's Gatchell 28-7, 7-25-20, dr hard brown shale 5620 ft.

TEMBIOR HILLS—Robt. Foster's No. 1, 2-32-22, dr brown shale 2720 ft.

WHEELER RIDGE—Reserve Oil & Gas Co.'s Tejon Ranch 1, 2-10-19, td 3708 ft, plug 1540 ft, redr 1630 ft.

KINGS COUNTY

ALPAUGH — Trico O&G Co.'s Magee & Stone 3, 36-24-22, td 4821 ft, to plug and test by 100 ft stages.

PYRAMID HILLS — General's Martin 1, 20-24-18, td 2079 ft, fault zone 1200-1500 ft, to dismantle rig.

MISCELLANEOUS

FRESNO COUNTY—Milham Explor. Co.'s Oro Loma 1, 12-12-11, dr silty sand 4000 ft. Russ Oil Synd.'s No. 1, 28-12-11, co 5115 ft. Taft Well Drlg. Co.'s Kreyenhagen 1, 33-22-16, spud May 1.

HUMBOLDT COUNTY—Texas' Eureka 1, 1-3-2, dr sand and shale 5801 ft.

SACRAMENTO COUNTY—Great American Pet. Co.'s Howard 1, 25-2-8, dr 2953 ft.

SAN JOAQUIN COUNTY—Amerada's F. D. L. 1, 15-2-5, testing, td 4151 ft.

TEHAMA COUNTY — Northern Counties Pet. Co.'s Ewers-Mooney 1, 25-24-3, testing 4001 ft.

TULARE COUNTY—Kabella Oil Co.'s No. 1, 12-23-37, sd 720 ft. Kings River Oil Pool's No. 1, 29-16-23, topped shale 3050 ft, td 3165 ft.

MONTEREY COUNTY—Shell's Branch 1, 34-24-10, dr 946 ft.

SANTA BARBARA COUNTY

GOLETA—West Elwood Oil Co.'s Simonds-Campbell 1, 9-4-28, wocs 6⅝ in 3600 ft, td 3700 ft.

LOMPOC—M. J. Freeman's La Brea 1, 11-7-33, ds 540 ft. Lompoc Pet. Co.'s Beauterbough 2, 18-7-34, co 3325 ft.

NAPLES—Scully & Snyder's No. 1, 7-4-29, dr gray sand 6291 ft, top Vaqueros 6225 ft.

SANTA BARBARA—M. & L. Oil Co.'s Domerick 1, 29-4-27, dr 1407 ft.

SAN LUIS OBISPO COUNTY

CHOLAME—Willett Oil Assn's Jack 2, 10-25-15, sd 3560 ft.

VENTURA COUNTY

BARDSDALE—El Rancho Oil Co.'s Elkins 1, 9-3-19, dr 1008 ft. Union's Dryden 1, 12-3-20, wocs 16 in 706 ft, td 743 ft.

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

* —*dry hole abandoned well.*
‡ —*salt water (completions).*
† —*junked and abandoned*
¶ —*million feet of gas.*
abd —*abandoned.*
bbls —*barrels.*
br —*building rig.*
b.s. —*basic sediment.*
csg —*casing.*
co —*cleaning out.*
dd —*drilling deeper.*
dk —*derrick.*
dr —*drilling.*
fsg —*fishing.*
ft —*feet.*
hfw —*hole full of water.*
in —*inches.*
lcn —*location.*
m —*milling.*
mim —*moving in materials.*
mit —*moving in tools.*
mot —*milling on tools.*
n, s, e, w, —*north, south, east, west.*
oih —*oil in hole.*
owdd —*old well drilling deeper.*
owpb —*old well plugging back.*
pb —*plugged back or plugging back.*
r —*reaming.*
rog —*rig on the ground.*
rur —*rigging up rotary tools.*
rust —*rigging up standard tools.*
sd —*shut down.*
sdtr —*sidetracking.*
sg —*show gas.*
si —*shut in.*
so —*show oil.*
so & g —*show oil and gas.*
spd —*spudding.*
sr —*straight reaming.*
sw —*salt water.*
td —*total depth.*
ur —*underreaming.*
wih —*water in the hole.*
wo —*workover.*
wocs —*waiting on cement to set.*
wosr —*waiting on standard rig.*

CONEJO — International Oil Developers' Powell 1, 33-2-20, td 3060 ft, pulling 8⅝ in to set above 2900 ft.

HOPPER CANYON—Oil Ridge Oil Co.'s Moran 3, 1-4-19, to test on pump, td 1603 ft.

LAS POSAS—Las Posas Pet. Co.'s Mahan 1, 22-3-20, td 8120 ft, to recement 8¼ in 7022 ft.

OJAI—Continental's Pirie 1, 12-4-23, td 2241 ft, plug 1544 ft, swabbing water and little oil.

SANTA PAULA — High Mesa Oil Co.'s Butcher 1, 16-4-22, dr 320 ft. Edw. M. Lesperance's Boosey 1, 31-4-20, sd 1150 ft. J. W. Mosher's No. 1, 22-4-21, sd 2300 ft.

SANTA SUSANA—American Drlg. Co.'s No. 1-A, 31-3-17, sd 550 ft.

SESPE—Supreme Oil Co.'s No. 1, 1-4-20, dr 246 ft.

SHIELLS CANYON—Texas' Shiells 128, 4-3-19, coring sandy shale 6546 ft.

SIMI—Dawson Oil Co.'s No. 1, 8-2-17, co 1910 ft. Paloma Oil Co.'s Paloma-Marr 1, 12-2-18, sd 995 ft.

SOUTH MOUNTAIN—Calco Pet. Corp.'s No. 2, 17-3-20, rur.

SOUTHERN CALIFORNIA

ARTESIA—Vanco Dev. Co.'s Millard 1, 25-3-12, dr hard shale 3160 ft.

BANDINI—Western Gulf's Vail 1, 16-2-12, spud Apr. 29.

BREA CANYON—Pressel-Perry-Tull's Baird 1, 30-2-9, sd 4176 ft.

EL SEGUNDO—Republic Pet. Co.'s No. 1, 18-3-14, td 5004 ft, to resume.

FAIRVIEW—Explorers Drlg. Co.'s Norris 1, 9-6-10, sd 960 ft.

HUNTINGTON BEACH (on Tidelands)—Black Eagle Oil Co.'s No. 1-B, permit 194, 32-5-11, co 4702 ft.

MANHATTAN BEACH—Bethlehem Explor. Co.'s Martin 1, 30-3-14, td 6827 ft, r to set 7⅝ in.

NEWPORT—Si Rubens No. 1, 14-6-10, sd 2574 ft. Wilshire Oil Co.'s Newport 1, 29-6-10, td 310 ft, wocs 13⅜ in 297 ft.

PICO—Frontier Oil Co.'s No. 1, 12-2-12, dr sand and shale 3420 ft.

PUENTE—N. O. Shiveley's Rowland 1, 23-2-10, sd 3145 ft.

SAUGUS—Barstow Oil Co.'s Walker 1, 35-5-16, to resume 3250 ft. International Oil Developers' Powell 1, 34-5-16, td 4339 ft, testing 2250 to 4000 ft.

TOPANGO CANYON—Monarch Pet. Co.'s Sylvia Park 1, 5-1-16, rig.

SAN BERNARDINO COUNTY — Great American Pet. Co.'s Gapco D-1, 18-2-8, dr 539 ft.

OKLAHOMA

ATOKA COUNTY—H. F. Potts' Nichols 1, sw sw nw 32-2s-9e, td 2635 ft, abd. Clark et al's Morrison 1, se se se 32-1n-14e, sd 200 ft.

BLAINE COUNTY—Earl Ingrahm's Masters 1, sw nw nw 27-16n-11w, dr 1240 ft.

BRYAN COUNTY—C. B. Welch's Collins 1, sw sw nw 19-8s-8e, sd 570 ft. Trio Oil Co.'s Gilbert 1, se se se 25-8s-7e, sd 521 ft.

CADDO COUNTY—Denver P. & R. Co.'s Sah-Cam 1, cse se 33-10n-10w, dr 4490 ft. H. W. Lee et al's Horton 1, ne ne ne 9-6n-13w, rust. Lee et al's Stacey Ferrell 1, sw ne ne 3-6n-13w, sd 2280 ft.

CANADIAN COUNTY—Carl Larkin's Brobine 1, nw nw ne 33-13n-5w, dr 5550 ft.

CARTER COUNTY—Carter Oil Co.'s Humble-Williams 1, sw ne sw 27-2s-3w, dr 5475 ft. Waco Turner's Munson 1, ne nw ne 35-5s-2w, dr 2445 ft.

CHOCTAW COUNTY—Burns et al's Hallum 1, ne nw nw 4-7s-20e, rust.

CLEVELAND COUNTY—Sinclair Prairie Oil Co.'s Franklin Community 1, se nw se 21-10n-2w, dr 6910 ft.

COAL COUNTY—Hudspeth et al's Schmelzer 1, ne sw ne 35-1n-8e, rig.

COMANCHE COUNTY — F. F. Stevens' Green 1, se se sw 2-1n-13w, dr 1562 ft. Henry

138,100 ft. 6-inch Standard 19-lb. pipe, line couplings and complete pumping station. 2—150 H.P. De La Vergne oil engines, direct connected to 2– 7½"x16" Gould triplex vertical pumps, 1000 pound pressure, vacuum pump. All necessary equipment 2—24' x 80' steel buildings with overhead cranes in each. All pipe and equipment in station same as new. Will sell all or any part. Located in Kay County, Oklahoma, 4 miles south of Tonkawa on Highway 177. 60,000 ft. 19-in. O.D. welded pipe and 40,000 ft. of 16-in. O.D. welded pipe. Cash or terms. Wire, phone, or write.

SONKEN-GALAMBA CORPORATION

64-108 North Second Street **Kansas City, Kansas**

Rosenthal et al's Au-chi-re-ah 1 "B", nw nw nw 5-1n-9w, td 2209 ft, abd.

GARVIN COUNTY—George Pace's Smith 1, sw sw ne 35-1n-1e, sd 2490 ft. Chas. E. Carter et al's Wood 1, nw sw se 5-4n-3e, dr 2340 ft.

GRANT COUNTY — Helmerich-Payne's Crouse 1, cne sw 29-25n-8w, co 6080 ft.

GREER COUNTY—Ent & Camp's Siminton 1, sw sw se 29-5n-21w, dr 50 ft. Gled Oil Co.'s Leeker 1, se se se 5-4n-21w, dr 930 ft.

HUGHES COUNTY—Freeman et al's Kite 1-A, nw nw ne 8-6n-10e, sd 700 ft. Dandridge & Crane's Mead 1, nw nw ne 17-5n-9e, sd 1335 ft. Amerada Pet. Corp.'s Adams 1-A, ne ne sw 31-9n-9e, flowed 111 bbls oil 17 hrs and produced 5 million gas. The Texas Co.'s Keaton 1, nw nw sw 4-8n-10e, dr 1450 ft.

JACKSON COUNTY—Palo Duro Oil Co.'s Ealum 1, se se sw 15-2n-21w, sd 1025 ft. Associated Oil Co.'s Harrell 1, ne ne sw 13-1s-21w, td 1240 ft, may skid rig. Whatley & Whatley's Holt 1, nw sw se 20-1n-20w, sd 1430 ft. Golden & Cochran's Duncan 1, sw sw ne 34-2n-21w, td 2505 ft, D&A. Buell et al's Kizzar 1, se se ne 2-2n-22w, td 1860 ft, running 6-in csg Gypsy Oil Co.'s Boucher 1, nw sw nw 32-1n-19w, sd 1739 ft. Marshall & Burnham's Hess 1, ne ne sw ne 27-1s-20w, dr 825 ft. Jack Kilgore et al's Wooldridge 1, se se ne 15-3n-21w, td 2366 ft, D&A. Selby Oil & Gas Co.'s Mack 1, nw nw sw 5-2n-20w, spd 30 ft.

JEFFERSON COUNTY — Gypsy Oil Co.'s James 1, sw se se 30-6n-6e, dr 1122 ft. Ben Levey et al's Ryan 1, nw nw nw 16-6s-6w, lcn.

KAY COUNTY—Harris-Haun's Schuessler 1, cnw sw 3-28n-2e, td 3945 ft, abd. Lindsay's Waggoner 1, nw nw ne 3-27n-1e, rust. Max Kelly's Spore 1, nw nw se 17-27n-2e, abd.

KIOWA COUNTY — Henson & Patton's Beeler 1, ne ne ne 11-5n-15w, sd 517 ft. Buell & Herndon's Haught 1, se se ne 22-1n-16w, sd 841 ft.

LINCOLN COUNTY—Carter Oil Co. et al's McFarland C-38 1, sw sw ne 18-13n-4e, dr 4900 ft. Stanolind Oil & Gas Co. et al's Campbell 1, sw sw nw 3-14n-3e, td 5064 ft, rust. Carlock's Young 1, cn½ nw nw 23-15n-5e, rur. Stanolind Oil & Gas Co.'s Cavanaugh 1, se se ne 31-15n-5e, sd 3545 ft.

LOGAN COUNTY — Sinclair Prairie Oil Co.'s School Land 1, se se se 36-17n-1w, td 5290 ft, pb to 5266 ft, produced 425 bbls oil, comp. Sinclair Prairie Oil Co. & Slick-Urschel's Koatsch 1, sw sw sw 23-15n-3w, Halliburton dr stem test showed 1700 ft oil and gas in 30 mins. Anderson-Kerr et al's Renfro 1, ne ne ne 33-16n-4w, dr 5740 ft. J. C. Shaffer's Hammond 1, se se sw 10-15n-4w, sd 6750 ft. Houghton Royalty's Langston 1, sw sw se 13-17n-1w, br. Mid-Continent's Community Nunn 1, se se nw 25-15n-1e, woc.

LOVE COUNTY — Amerada Petroleum Corp. & Stanolind Oil & Gas Co.'s Westheimer & Daube 1, nw se se 27-6n-2e, sd 790 ft.

MAJOR COUNTY—I.T.I.O. Co. & Continental Oil Co.'s Fairview 1, csw se 32-33n-14w, br.

MARSHALL COUNTY—Paul Robb's Vittetoe 1, cne se 11-5s-4e, sd 5461 ft.

McCLAIN COUNTY—Anderson & Kerr's Newburn 1, nw sw ne 24-5n-3e, sd 2945 ft.

McCURTAIN COUNTY—Schrivner et al's Central Life Assn. Society 1, ne sw sw 24-6s-21e, dr 956 ft.

MURRAY COUNTY—Manahan Oil Co.'s Ward 1, ne se nw 18-1s-3e, td 2110 ft, abd. Equitable Oil & Gas Co.'s Baer 1, sw nw nw 21-1s-3e, td 1250 ft, abd. Equitable Oil & Gas Co.'s Ferguson 1, ne ne sw 26-1s-3e, fsg 423 ft.

NOBLE COUNTY—Stanolind Oil & Gas Co., Amerada Pet. Corp. & Slick's Fuller 1, cse sw 34-20s-2w, td 5081 ft, potential 1812 bbls oil, comp.

OKFUSKEE COUNTY — Amerada Pet. Corp. et al's Jaynes 1, nw nw sw 20-10n-10e, wocs.

OKLAHOMA COUNTY—Atkinson et al's Reed 1, ne ne ne 4-12n-3w, coring 6948-6954 ft. Gypsy Oil Co.'s Schock 1, nw sw sw 2-14n-3w, dr 5650 ft. Sinclair Prairie Oil Co.'s Corbett 1, ne nw ne 17-13n-3w, dr 2740 ft. Slick-Urschel et al's Owen Community 1, se se se 19-13n-3w, dr 2800 ft.

PAWNEE COUNTY—Trees Oil Co.'s Susan Wedd 1, cse se 27-24n-5e, dr 1415 ft.

PITTSBURG COUNTY—Gray et al's Lee 1, nw nw se 12-5n-13e, fsg 1210 ft.

PONTOTOC COUNTY — Paramount Oil Co.'s Graham 1, sw se sw 13-1n-7e, td 3478 ft, pb, shot 10 qts at 2480-2500 ft, treated with 1000 gals acid, dry. Gillette & Kroeger's Duver 1, nw nw se 36-1n-6e, sd 1300 ft. Fleetborn Oil Corp.'s Oliver 1, ne nw se 21-4n-5e, td 2229 ft, pb 1665 ft, rum. Phillip Boyle's McCracken 1, ne nw nw 3-15n-4e, td 2170 ft, wocs. Marcum's Magnuson 1, sw se se 23-2n-7e, td 1930 ft, will rur and dd. Continental Oil Co.'s McCarthy 1, csw nw 12-1n-7e, ru.

POTTAWATOMIE COUNTY — James et al's Neal 1, nw se sw 4-5n-3e, swab 80 bbls oil 5 hrs, water broke through, recementing. Howard Sherman et al's Wingo 1, ne nw se 32-10n-5e, td 4394 ft, pb 4360 ft, shot 30 qts at 4325-4355 ft, pipe collapsed.

PUSHMATAHA COUNTY—William Ungerman's Messer 1, se sw sw 35-3s-18e, td 2990 ft.

SEMINOLE COUNTY—Sovereign Drilling Co. et al's Thomas 1, nw nw se 8-6n-7e, sd 3950 ft. Slick-Urschel's Baskin 1, ne ne sw 9-5n-6e, abd. Cooper's Chandler 1, ne se sw 4-5n-6e, sd 1780 ft.

STEPHENS COUNTY—Wm. Angle et al's Cooper 1, ne ne ne 35-1s-19w, td 3406 ft, may dd.

TILLMAN COUNTY—Laper et al's Conrad 1, ne ne ne 35-1s-19w, sd 1320 ft.

WASHITA COUNTY—McWhirter's Fee 1, sw sw sw 34-8n-19w, td 300 ft.

KANSAS

BARBER COUNTY—Wentz's Skinner 1, cnw ne 29-31s-14w, spd.

BARTON COUNTY—Lario Oil & Gas Co. et al's Nuss 1, nw sw sw 11-16s-14w, dr 2050 ft. Wolf Creek's Kraft 1, sw sw sw 26-16s-11w, sw 3400-3402 ft. Suppes & Witts' Hayes 1, sw sw sw 6-16s-14w, ru. McMorrow & Spencer's Hagen 1, ne ne ne 33-20s-11w, ur 5-in csg 3512 ft. Pryor & Lockhart's Herrington 1, ne ne nw 6-16s-12w, ru. Derby Oil Co. et al's State 1, ne se se 4-20s-11w, cored 3307-3326 ft, testing. Torrey & Feaster's Feist 1, ne ne se 29-18s-11w, lcn. Lario Oil & Gas Co. & McCoy's Dolechek 1, ne nw ne 13-16s-12w, lcn.

BUTLER COUNTY—Emrich et al's Heorman 1, sw sw sw 20-26s-3e, spd. Ward McGinnes' Jackson 1, sw sw ne 26-25s-8e, spd. Sanford et al's Corn 1, se se se 1-28s-4e, dr 1900 ft.

COWLEY COUNTY — McCoy's Brandenburg 1, sw sw se 17-34s-5e, co 2280 ft. Lloyd, Frost & Study's Weathered 1, sw se se 28-31s-3e, hfw 2145-2150 ft, sg 2305 ft, hfw 2310 ft, dr 2360 ft. Ostat et al's Eckhardt 1, se se nw 15-35s-6e, abd. Baden, Johnson, Roth & Farrout's David 1, ne ne sw 35-30s-4e, mim.

ELK COUNTY—Clay Pet. Co.'s Shambaugh 1, cne se 20-28s-9e, td 2870 ft, abd.

ELLIS COUNTY—Palmer & Storm King Oil Co.'s Ruder 1, se ne nw 17-15s-18w, rig. Stanolind Oil & Gas Co.'s Penny-Wann 1, nw sw se 12-15s-20w, br.

PIPE

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5,500′ 4″ Used Line Pipe
14,000′ 6″ Used Line Pipe
7,000′ 8″ Used Line Pipe

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1,800′ 5-3/16″, 17-Lb. Used Casing
1,800′ 6⅝″, 24-Lb. Used Casing
1,800′ 8¼″, 32-Lb. Used Casing

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50,000′ 4½″ O.D. 6.87-Lb. NEW Line Pipe in 40′ Lengths, Plain End.

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Successors to CRAIN READY-CUT HOUSE CO.
HOUSTON, TEXAS

ELLSWORTH COUNTY—Carter Oil Co. et al's Teubner 1, se se nw 26-17s-9w, td 3178 ft, produced 1141 bbls oil, comp. Pryor & Lockhart et al's Gregory 1, se se se 19-16s-8w, td 3386 ft, abd. Lario Oil & Gas Co. et al's Wright 1, sw sw ne 17-16s-8w, td 3400 ft, D&A. Lario Oil & Gas Co. et al's Central National Bank 1, se se nw 33-15s-8w, spd and sd. Lario Oil & Gas Co. et al's State 1, sw sw sw 29-15s-8w, dr 3001 ft. Western Exploration Co.'s Wilkins 1, nw sw nw 9-17s-9w, spd.

GREENWOOD COUNTY—Mullendore et al's Pedroje 1, ne ne sw 14-23s-11e, dr 900 ft.

HARVEY COUNTY—Twin Drilling Co. et al's Ruth 1, sw sw sw 16-22s-2w, hfw 2600 ft, fsg 2612 ft. Goering Brothers' Brainard 1, ne ne sw 2-23s-2w, dr 405 ft. H. H. & S. Oil Co.'s Buller 1, ne ne se 31-23s-2w, pits abd. Cameron, Derby & Trees' Brainard 1, sw se nw 17-24s-2e, hfw 2190-2205 ft, dr 2220 ft. Winkler-Koch et al's Mueller 1, se sw nw 15-23s-2w, spd and sd. Lauck et al's Baller 1, sw sw sw 29-24s-1e, dr 1425 ft.

KINGMAN COUNTY—Kingman Oil Co.'s Wetherall 1, ne ne sw 20-28s-10w, mim.

McPHERSON COUNTY—Lario Oil & Gas Co.'s Base 1, sw sw sw 22-20s-2w, td 3576 ft, abd. Palmer Oil Corp.'s Swenson 1, ne ne sw 11-18s-3w, sd 3018 ft. Shell Pet. Corp.'s Wenger 1, ne ne ne 2-20s-1w, 60 bbls oil and 60 bbls water, treated with 1000 gals acid, no test. W. C. McBride's Mugler 1, se sw sw 22-20s-3w, dr 3068 ft.

NESS COUNTY—Phillips Pet. Co.'s Young 1, cnw sw 13-18s-21w, dr 3715 ft. Atlantic Oil Co.'s Mark "A" 1, cse se 28-20s-23w, dr 2632 ft.

OSAGE COUNTY—Jim Edwards' Deitrick 1, cnw se 21-14s-15e, sd 800 ft.

PAWNEE COUNTY — Atlantic Oil Co.'s Slepake 1, cne ne 15-23s-17w, coring 3807 ft.

RENO COUNTY — Privett Drilling Co.'s Cretts 1, ne nw ne 27-26s-10w, dr 4340 ft. Bradley's Olmstead 1, sw sw sw 22-22s-7w, rog. Mylius et al's Sprowl 1, ne nw ne 1-24s-5w, dr 1170 ft. Gypsy Oil Co.'s Tonn 1, sw nw se 16-25s-4w, spd.

RICE COUNTY—Allison & Fitzwilliams et al's Stumps 1, nw nw sw 4-18s-10w, td 3267 ft, pumped 218 bbls oil in 10 hrs. Foraker-Nickerson et al's Lyon 1, se se ne 27-20s-8w, dr 3582 ft. Vickers Pet. Co. et al's Gouldner 1, se ne nw 16-18s-9w, ur 10-in csg 2240 ft. Day's Mason 1, nw ne ne 28-21s-7w, dr 2400 ft. Gypsy Oil Co.'s Kessling 1, nw nw sw 10-20s-9w, td 3267 ft, pb to 3265 ft, produced 238 bbls oil, comp. Fred Rust et al's Brown 1, ne ne ne 16-21s-6w, ru.

ROOKS COUNTY—Smith & Ash's Nelson 1, nw nw ne 27-10s-16w, sd 50 ft. Trees Oil & Findeiss' Johnson 1, sw sw se 26-10s-19w, dr 610 ft. Stearns-Streeter et al's Hoskins 1, se sw se 34-9s-16w, td 3596 ft, D&A.

RUSH COUNTY—Lario Oil & Gas Co. & Phillips Pet. Co.'s Benbow 1, nw ne ne 12-17s-19w, td 3818 ft, abd. Boyle & Grossman et al's Yost 1, csw sw 23-17s-18w, dr 640 ft. El Dorado Refining Co.'s Stang 1, se se nw 36-17s-17w, spd and sd. Morgan & Flynn et al's Schlegel 1, se se nw 26-17s-16w, dr 3270 ft.

RUSSELL COUNTY—Wolf Creek et al's Penn Mutual 1, sw sw sw 22-15s-15w, ur 10-in csg 2325 ft. Murphin's Funk 1, sw sw sw 19-12s-13w, td 3220 ft, D&A. Reserve et al's Moore 1, cnw nw sw 15-13s-12w, br. Hartman & Blair's Hildegrandt 1, nw ne sw 12-14s-14w, sd 3345 ft. Ryan Pet. Co.'s Newbold 1, nw se ne 25-12s-15w, hfw 2420 ft, dr 2665 ft. Pryor & Lockhart's Spicer 1, ne ne se 21-11s-15w, mim. Hartman & Blair's Claussen 1, se ne sw 34-12s-14w, mim. Hartman & Blair's Rexroot 1, ne nw nw 31-14s-14w, cellar. Wakefield & Armer's Hall 1, ne se sw 36-14s-15w, dr 825 ft. Buffalo Oil Co.'s Kunz 1, ne ne sw 19-14s-15w, lcn.

SALINE COUNTY—Dieter et al's Herrington 1, ne nw se 3-13s-11w, td 3289 ft, abd.

SEDGWICK COUNTY — Western Kansas Oil & Refining Co. et al's Betzen 1, se se ne 17-16s-13w, fsg 3553 ft.

STAFFORD COUNTY—Lario Oil & Gas Co. et al's Tudor Morgan 1, se se nw 23-24s-13w, pumped 298 bbls oil 1st 24 hrs and pumped 99 bbls oil 2nd 24 hrs, rudd. Davie et al's Riley 1, se se se 19-22s-11w, ru. Empire Oil & Refining Co.'s Grove 1, ne ne nw 5-22s-11w, lcn.

SUMNER COUNTY — Shell Pet. Corp.'s Green 1, se sw nw 3-33s-2e, dr 3110 ft. Allison & Fitzwilliams et al's Hitchcock 1-B, se se nw 16-30s-1w, cellar.

TREGO COUNTY—Jenmar Oil Co.'s Jones 1, se se se 30-12s-23w, treated 2000 gals acid, no increase, dr 3933 ft. Hansa & Lauck's Lang 1, se se nw 1-14s-21w, rig.

WOODSON COUNTY—Foster & Schultz' Ferguson 1, cs½ ne sw 12-26s-13e, dr 1200 ft.

NEW MEXICO

BERNALLILO COUNTY — Norris Realty Co.'s aGllegas Grant 1, cnw nw 19-11n-4e, abd.

EDDY COUNTY—Getty Oil Co.'s Dooley 7, sw nw 24-20s-29e, Twin Hills structure, dr in grey lime 3825 ft. Stoval & Marshall's Rose 2, cne sw 28-24s-27e, dr 2180 ft. Geo. F. Getty Oil Co.'s Andrew Dooley 7, swc nw 24-20s-29e, 6000-ft test, elev 3309 ft, dr 3830 ft.

LEA COUNTY—Amerada Pet. Corp.'s State 1-F, c sw sw 36-19s-36e, Monument area, elev 3594 ft, top anhydrite 975 ft, salt 1220-2275 ft, sd for dst with so&g in lime 3892 ft. Anderson-Prichard Oil Corp.'s Brett-Conoco 1, c se nw 7-20s-35e, Monument area, lcn; Fisher 1, c se ne 8-20s-35e, elev 3690 ft, r 2005 ft. Amon G. Carter et al's G. H. Mattix-Conoco 1, c se nw 3-24s-37e, elev 3258 ft, top anhydrite 1090 ft, top salt 1225 ft, dr 2400 ft. R. H. Henderson et al's P. J. Langley 1, c se se 8-25s-37e, elev 3162 ft, top salt 1205 ft, making gas, lost 2 strings tools, td 2875 ft, lost whipstock, fsh 2875 ft. Humble O&R Co.'s J. L. Coates 1, c nw ne 10-24s-36e, elev 3383 ft, salt 1314-2947 ft, top lime 2995 ft, trying to run 7-in cas, td 3355 ft; J. L. Coates 1-A, relief well, elev 3385 ft, top anhydrite 1324 ft, top salt 1437 ft, pumping 200 bbls water per hour to kill offset, td 3394 ft. Jeffers Oil Co., (R. H. Henderson's) C. M. Carlson-Conoco 1, c nw se 27-25s-37e, sp and sd; A. N. Etz-Conoco 1, c ne sw 12-21s-32e, cem 12½-in cas 680 ft; Jiminez-Conoco 1, c sw se 12-20s-33e, sd 205 ft. Maljamar O&G Corp.'s P. Miller 1, c nw sw 23-17s-32e, elev 3992 ft, top anhydrite 790 ft, top salt 955 ft, cem 6⅝-in cas 3575 ft, td 3595 ft. Nat'l Securities Oil Corp.'s V. Linam 1, nec s½ sw 33-18s-37e, elev 3712 ft, top anhydrite 1580 ft, logged salt 1716-2650 ft, top lime 2956 ft, pb from sulphur water at 4506 to 4230 ft, sd for acid treatment. Ohio Oil Co.'s State-McDonald 3, c nw se 16-22s-36e, elev 3562 ft, top anhydrite 1450 ft, dr 1600 ft. Repollo Oil Co.'s B. W. Arnold 1, swc nw se 6-20s-32e, elev 3567 ft, top anhydrite 1540 ft, logged salt 1637-2695 ft, show o&g on dst in lime 4628 ft, sd for acid treatment. Rowan-Drilling Co. & Neville G. Penrose's E. M. Elliott-Conoco 1, c ne sw 17-22s-37e, elev 3400 ft, top anhydrite 1070 ft, dr 3480 ft. Shell's State-Endura 1, c se ne 12-21s-35e, elev 3588 ft, top lime 3020 ft, pb from hfw 4404 to 3926 ft, flowing 35 bbls oil daily after shot and acid. Superior Oil Co. (Cal's), State 1, c ne ne 2-20s-36e, Monument area, dk. Sun Oil Co.'s W. B. Maverly 1, c ne se 35-19s-36e, Monument area, lcn. The Texas Co.'s Saunders 1, c se sw 18-19s-37e, Monument area, dk. W. L. Todd & The Texas Co.'s Fred Cole 1, c ne ne 35-19s-33e, elev 3603 ft, top salt 1540 ft, top white lime 3250 ft, sd 3518 ft. Sam K. Vierson & Brown's W. D. Robinson 1, c nw se 14-11s-32e, elev 4355 ft, rig.

OTERO COUNTY—Flynn, Welch & Yates' Donohue 1, cnw ne 28-24s-15e, Sacramento Creek, dr 700 ft.

SAN JUAN COUNTY—Phillips & Healy's Test 2, sec 34-30n-11w, dr 600 ft.

UNION COUNTY — Sierra Grande Oil Corp.'s J. J. Rogers 1, cne sw 4-29n-29e, dr 1400 ft. Continental's Rattlesnake 43, nw se nw 12-39n-19w, abd 990 ft.

WYOMING

BIG HORN COUNTY—California Exploration Co.'s Gafner 1, sw sw 4-54n-94w, pb 950 ft and testing. Yale Oil Corporation's Blakesley 1, ne ne nw 28-49n-91w, udr 8¼-in csg to 1425 ft.

CARBON COUNTY — Earl W. Reader,

No. 512 Tom Thumb

PIPE THREADING MACHINE

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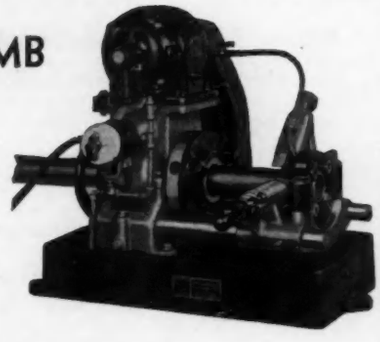
A Real "Buddy" for Oil Field Men



You can't find the equal of No. 512 Tom Thumb for BIG performance at so LITTLE cost! Compact . . . yet a complete pipe threading and cutting-off machine. Threads all sizes of pipe from ½" to 2" inclusive. Operates from ordinary light socket. Portable so it can be moved easily, when required.

Optional die-heads: Solid type has six solid die-heads, one for each size of pipe from ½" to 2"; Quick-opening Adjustable type with three sets of high speed steel dies, threading the range from ½" to 2" inclusive. Bolt dies can also be furnished.

Send for complete description of No. 512 Tom Thumb.

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SALES OFFICE: 2064 EAST 61st STREET, CLEVELAND, OHIO

FACTORIES: ERIE, PA. AND CLEVELAND, OHIO

Inc.'s Whitford 1, sw se se 24-20n-84w, dr 4100 ft. Ohio Oil Co. and California Co.'s Kyle 1, ne se ne 26-21n-79w, coring in second bench of Sundance at 5315 ft and showing good gas saturation.

CONVERSE COUNTY—E. B. Jones's State 1, sw sw sw 16-32n-69w, dr 500 ft.

FREMONT COUNTY—Mid-American Oil Co.'s Government 2, cne sw 14-28n-92w, recementing production string 2175 ft after acidizing with hole bottomed at 2262 ft.

WASHAKIE COUNTY—
Wyoming O&R Co.'s Frison 1, nw sw nw 14-48n-91w, sd 1400 ft.

MONTANA

BIG HORN COUNTY—Enterprise Oil Co. and Norbeck Drilling Co.'s Lynde 2, sw nw se 21-6s-35e, sidetracking past 200 ft of 4¾-in csg parted on bottom. 3590 ft.

FERGUS COUNTY — H. C. Rowland's Woodward 1, se se sw 20-14n-24e, dr 3030 ft.

BARGAINS

IN NEW

PIPE LINE

EQUIPMENT

2—MODEL GH — McCormick-Deering Trackson-Crawler Tractors with W.K.M. Combination Side Boom and Back Fillers—Latest Models.

2—MODEL GH—Crawler Tractors with W.K.M. Side Booms—Latest Models.

1—MODEL GH—Crawler Tractor with Front End Bending Winch.

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We are offering these below our cost.

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BROWNING-FERRIS MACHINERY CO.

DALLAS **HOUSTON**

LIBERTY COUNTY—J. H. Hamilton Syndicate's Northern Farms 1, cne sw 10-37n-5e, dr 2490 ft, so 2335 ft in Basal Colorado.

PHILLIPS COUNTY—Grant Smith et al's Phillips 4, e½ nw sw 2-24n-23e, dr 230 ft. Guy Norman's Pewitt 1, ne nw ne 20-24n-24e, dr 560 ft.

ROSEBUD COUNTY—Birney O&G Co.'s Fee 1, sw sw sw 6-6s-42e, dr 235 ft.

COLORADO

BOULDER COUNTY—Leslie R. Steele et al's Maxwell 1, sw ne nw 24-1n-71w, dr 708 ft.

PARK COUNTY — South Park Oil Co.'s State 1, se se sw 16-11s-17w, Hartsel anticline, udr 10-in csg 1250 ft to set on bottom 1415 ft.

PROWERS COUNTY—Trojan O&G Co.'s Lotus 1, nw ne ne 15-23s-46w, Lamar district, sd 5227 ft.

EAST TEXAS

ANDERSON COUNTY—Gulf Prod. Co.'s W. B. Robinson 2 (100-ac), David Stiles sur, Camp Hill area, elev 630 ft, Pecan chalk 3982-4245 ft, dr 4270 ft; Southern Pine Lumber Co. 1 (108-ac) H. Main sur, Camp Hill area, rig. Gulf and Humble's O. G. Rogers 1 (267½-ac), Daniel Parker sur, 5 mi sw of Elkhart, elev 301 ft, Pecan chalk 4095-4280 ft, Austin chalk 5047-5280 ft, top Woodbine section 5486 ft, sand 5519-23 ft, tested sw, top Red Beds 5669 ft, dry and abd 5772 ft. Hunt Prod. Co.-Sun Oil Co.'s Mrs. Alice Scott-Pure 1 (300-ac), Jas. Crawford sur, Slocum area, elev 411 ft, Pecan chalk 4450-4648 ft, Austin chalk 5055-5217 ft, coring 5230 ft. R. B. Sanders et al's S. G. Moore 1 (28.83-ac), J. C. Rosson sur, Camp Hill area, lcn. Tide Water and Texas Seaboard Oil Co.'s N. N. Wills 21-A, Cayuga field Trinity test, elev 308 ft, dr 7780 ft; John Smith 1 (49.1-ac), John Adams sur, Long Lake field gas unit, elev 294 ft, Pecan chalk 3458-3709 ft, Austin chalk 4711-4946 ft, top Sub-Clarksville sand 4957 ft, so&g on dst at 4982-5020 ft, top Woodbine 5165 ft, coring 5335 ft; C. T. Valentine 1 (301-ac), John Little sur, 9 mi n of Palestine, sp.

BOWIE COUNTY—Tex-Ark Oil Co.'s J. B. Hamilton 1 (40-ac), Jessie Milam sur, elev 272 ft, dr 260 ft.

CAMP COUNTY—E. J. Moran, G. E. & Ray Hubbard's W. M. Mitcham 1 (100-ac), L. Rose sur, 1½ mi n of Newsome, lcn.

CASS COUNTY—J. M. Lapin and Penguin O&G Co.'s A. M. Rhyne 1 (570-ac), David Frazier sur, 3 mi w of Avinger, Pecan chalk 2451-2965 ft, top Blossom sand 3390 ft, dr 3565 ft.

CHEROKEE COUNTY—Jacksonville O&G Corp.'s H. D. Henderson 1 (40-ac), J. Pineda sur, elev 409 ft, sd 693 ft. Killough et al's J. S. Strickland 1 (40-ac), Urian Moore sur, 7 mi nw of Jacksonville, elev 433 ft, sd 3505 ft. Florence Oil Co. & H. A. Baker's Tol Smith 1 (40-ac), Jose Pineda sur, 4 mi nw of Jacksonville, rig. Ponta Oil Co. et al's C. W. Darley 1 (35-ac), (east) Cyrus Parks sur, 24 mi s Summerfield, elev 434 ft, Pecan chalk 3584-3995 ft, top Austin chalk 4416 ft, dr 4450 ft. T. J. Wood & Young's New Birmingham 3 (160-ac), Levi Jordan sur, Rusk pool, dr 1855 ft.

ELLIS COUNTY—Murphree & Lon Coker's Coker 1 (30-ac), R. de la Pena sur, Austin chalk 622-1010 ft, sd 1545 ft.

GREGG COUNTY—O. T. Clark et al's T. G. Williams 1 (100-ac), David Hill sur, 3 mi ne of Longview, elev 426 ft, Pecan chalk 2391-2985 ft, top Austin chalk 3447 ft, set 5 3/16-in cas 3553 ft, testing 3771 ft.

HENDERSON COUNTY—Great State Oil Corp.'s R. Sid Ansley 1-A, N. B. Thompson sur, elev 268 ft, top Austin chalk 2550 ft, dry and abd 3315 ft. O. M. Rector et al's C. L. Loper 1 (3½-ac), I. Clendennen sur, Cayuga field, lcn. Fred Upchurch et al's C. L. Loper 1 (3½-ac) I. Clendennen sur, Cayuga field, lcn. Taubert & McKee's M. T. Dodd 1 (160-ac), Geo. Aldrich sur, 4 mi e Malakoff, elev 376 ft, Pecan chalk 2390-2504 ft, Austin chalk 3456-3610 ft, dry and abd, td 4049 ft. H. M. Wilson et al's fee 1 (943-ac), Thomas Caro sur, 5 mi n Malakoff, dk.

HOPKINS COUNTY—D. A. Hale et al's L. N. Hall 1 (70-ac), A. Caro sur A-143, elev 506 ft, Pecan chalk 1825-2040 ft, top Austin chalk 2728 ft, sd 2950 ft.

HUNT COUNTY—D. T. Cauble et al's Y. B. Reed 1 (220-ac), F. Thweatt & C. B. Payne sur, 3 mi se Greenville, top Woodbine 2809 ft, top Red Beds 2874 ft, tested dry 3437 ft. J. F. Morrissey Co., Inc.'s P. B. Fry 1 (146-ac), Calloway Davis sur, 7 mi se Ladonia, rig. H. G. Samson and Shawver et al's J. R. Phillips 1 (53 1/3-ac), W. L. James sur, elev 522 ft, top Gober chalk 550 ft, top Austin chalk 1113 ft, dry and abd 2065 ft.

KAUFMAN COUNTY—G. H. Germany et al's D. Clark-W. S. Kirby 1, S. Edens sur, sd 1780 ft. L. P. Kean et al's J. B. Hunter 1, R. Sowell sur, 4 mi s Terrell, elev 453 ft, top Austin chalk 1785 ft, tested sw in Woodbine 3400 ft.

LEON COUNTY—Killough & Tucker's J. W. Lee 1, Jacob Burleson sur, Buffalo area, rig.

LIMESTONE COUNTY—J. W. Kemp Co.'s Vol DeLong 1 (220-ac), Pedro Varella sur, 2½ mi n Thelma, sp. Dan H. Daugherty et al's Sallie Welch 1 (94-ac), Pedro Varella sur, Austin chalk 2350-2650 ft, top Woodbine 2890 ft, coring 3005 ft. J. Edward Mills et al's J. B. Hunt 1 (34¼-ac), Israel Woods sur, 3 mi ne Kosse, Pecan chalk 2010-2137 ft, Austin chalk 2780-3158 ft, top Woodbine sand 3578 ft, fsh 3636 ft.

MORRIS COUNTY—Steve J. Rotondi et al's W. & C. Smith 1 (50-ac), M. C. Vela sur, 2½ mi sw Naples, rig. B. L. Watson et al (was HNH Drlg. Co.'s), E. Hall 1 (177-ac), Levi Jordan sur, top Pecan chalk 2360 ft.

NAVARRO COUNTY—L. N. McCulloch et al's Berry Bros. 1 (35-ac), W. W. Moss sur, Austin chalk 751-1060 ft, sd 1182 ft. E. M. Thomason & Co., Inc.'s Celia Moran 1 (100-ac), Wm. Haggard sur, rig. Wiggins et al's D. A. Donoho 1 (63½-ac), John Cauple sur, 2 mi sw Corsicana, elev 467 ft, sd 1439 ft.

RED RIVER COUNTY—J. E. Dinger et al's W. T. Norris 1 (351-ac), Joseph Guest sur, 1 mi s Detroit, elev 464 ft, Red Beds 1290-1413 ft, sd 1860 ft. C. M. "Dad" Joiner A. M. Gibbons et al's D. Rust 1, C. C. Wilborn sur, s edge Avery, dk.

ROBERTSON COUNTY — H. L. Patton Co.'s W. H. & H. A. Ely 1 (616-ac), Antonio Manchaco sur, 5 mi se Hearne, elev 392 ft, top Carrizo 661 ft, dr 2010 ft.

RUSK COUNTY — Ben E. Lamb et al's Haywood Leath 1 (185-ac), L. J. Dooley sur, 2½ mi ne Pirtle, elev 370 ft, Pecan chalk 2418-2793 ft, Austin chalk 3352-3512 ft, sd 4740 ft.

SMITH COUNTY—W. L. Cloud and A. G. Deck's Dora Kendall 1, John Williams sur, 3 mi e of Van field, sd 1650 ft. W. R. Harrison et al's W. P. Rushing 1, Jacob Herrin sur, 1½ mi se Whitehouse, elev 393 ft, pb from 4673 to 4330 ft, standing.

TITUS COUNTY—Steve J. Rontondi et al's O. C. Lillianstern 1 (40-ac), W. H. Crawford sur, 5 mi se of Talco, elev 301 ft, dk.

UPSHUR COUNTY—John Hooser & Ben G. Barnett's O. J. Phillips 1 (100-ac), P. White stone & L. Henderson sur, elev 371 ft, Pecan chalk 2665-3065 ft, top Austin chalk 3495 ft, testing 3675 ft. Thos. D. Humphrey et al's Claude Nation 1 (156.28-ac), Robertson Asher sur, 1½ mi n of Ore City, rig.

VAN ZANDT COUNTY—Blackwell O&G Co. & Ike Rudman's J. F. Malone 1 (100-ac), J. Balch sur, A-102, 2½ mi se Van, dr 2140 ft. A. A. Geyer et al's J. E. Crim 1 (41.6-ac), Wm. Daniel sur, lcn. Newt Tidwell & W. J. Rogers' L. E. Breucher 1 (98¾-ac), David Clapp sur, 5 mi se Wills Point, elev 499 ft, top Pecan chalk 1984 ft, top Austin chalk 3014 ft, dr 3155 ft.

EAST TEXAS BORDER COUNTIES

HARRISON COUNTY—Roy C. Swails et al's Bonnie Pitts 1, SEc G. W. Martins sur, re-setting 10-in surf csg 170 ft. Hanover, Bergendall et al's Buchanan 1, W. M. McIlvain sur, sd 3682 ft. Hammonds & Williams' W. T. Cock 1, J. N. Sorrell sur, hole clean, arr resume, td 2392 ft.

MARION COUNTY—Ed S. Holmans' Lizzie Henderson A-1, R. Bennington sur, 6⅝-in csg at top pg after pb to 2445 ft, setting 4½-in liner to test.

PANOLA COUNTY—J. L. Cadrin's Robt.

Johnson 1, J. Johnson sur, dk. Flinchbaugh & McAneny's M. G. McCormick 1, Jas. P. McAdams sur, rur. G. F. Hudson's J. F. Nail 1, C. McCrary sur, elev 283 ft, claim so 2337 ft, set 4½-in csg at 2300 ft, td 2337 ft. Geo. Le Grand's P. J. Laidleigh 1, A. Thompson sur, sd 55 ft. S. B. Wallace 1, A. M. McLaughlin sur, rur.

SABINE COUNTY—Smithsonian Pet. Co.'s Hamilton 1, Jno. Haley sur, cored Wilcox sand with reported so, arr ds test, td 868 ft.

SHELBY COUNTY—I. M. Bradley et al's J. J. Ashberry 2, J. M. Mitchell sur, 6⅝-in csg 2960 ft, dr 3365 ft. C. E. Litchfield et al's W. C. Windham 1, A. H. English sur, rur.

SOUTH TEXAS

BANDERA COUNTY — Palm-Winn Oil Co.'s (P. H. Van Winkle) R. B. Watson 1, sur 71, 2 mi n Medina City, reinstate, prep to set csg 1700 ft. Plateau Oil Co.'s R. G. Garrison 1, sec 506, GC&SF sur, dr 3475 ft.

BASTROP COUNTY—Marts & Beavans' W. L. Miller 1, blk 22, Dennis Dykes sur, fsh 3170 ft.

BEE COUNTY—Dirks Brothers' I. J. Miller 1, Cayetno Rivas sur, lcn cleared, prep to mim. Falvey et al's S. D. Copeland, dr about 100 ft. Felmont Corp.'s J. T. Earnest 1, Bee County School Land sur No. 17, dr 5225 ft. A. Hartzendorf's Fee 1, G. A. Kerr sur, td 3648 ft, ru to pump. Humble O&R Co.'s Thompson 2, G. Roache sur, td 5405 ft, comp fsg job, set cas to bottom, wocs. F. P. Hynes et al's Theo. M. Plummer 1, Plummer sub, sec 33, Chessman sur, sd 1530 ft, wait on coring device. Mid-Continent Crude Oil Co.'s A. J. Kimball 2, S. Winship sur, re-operations, td 3555 ft, trying to comp in sdtr hole 3544 ft.

BEXAR COUNTY — American Gas Co.'s Oliver 5, M. F. Rodriguez sur, dr 2685 ft, Glenrose. N. G. Carter's Bilharts Bros. 1, F. Rolen sur No. 48, dr 755 ft, carrying 8½ csg. James B. Cunningham et al's L. F. Ridder 1, 900 ft el, 950 ft sl of 701-ac tr, in County Blk 5196, Ab. 50, 2 mi e McDonna, set 80 ft sur csg. Cherokee Drlg. Co.'s P. A. Chapman 1, A. J. Leslie sur, 1074 ac tr, 6 mi sw S. A., sd 400 ft. M. A. Frederich's Fee 1, Recardo sur, dr 1050 ft, corrected depth. Jones & Keiffer's E. W. La Grange 1, F. Rolen sur No. 48, sd 1010 ft. McPhee & Briggs' Florence Lamb 1, M. de Luna sur No. 4, dr 2000 ft. Mid-Tex Pet. Co.'s Walker 1, lot 21, S. N. Dobie sur, dk. Tom Owens et ux's Fee 1, ne cor 11.2 ac tr out of Trawalter sub, S. Jett sur, dr 40 ft. Joseph H. Parker's M. McCloskey 1, 1525 ft nl, 150 ft wl 42.6-ac tr, F. A. Desaque sur, 5 mi nw Somerset, sd 90 ft for rotary shoe. Carroll C. Raborn's Claud McCauley 1, Wm. Harris sur No. 52, re-dr 168 ft; A. B. Stephens 1, P. N. Hays sur, still sd for rotary 410 ft. Rowan & Nichols Oil Co.'s A. Zigmond 1, 1350 ft sl, 2250 ft el of A. Deffenbaugh sur, 10 mi e S. A., sp.

CALDWELL COUNTY—Exploration Dev. Co.'s W. T. Mooney 1, S. Seal sur, sd 1065 ft. Ogden & Reed Oil Co.'s T. H. Compton 1, 150 ft nwl, 450 ft swl 100-ac tr, F. Martinez sur, 1 mi nw Lytton Spgs., dr 1354 ft. Trail et al's A. B. Tiller 1, G. Hinds sur, td 2612 ft, prep to acidize. R. Y. Walker's Pierce 1-B, Seal sur, trying to comp at 2348 ft in pb hole from 2556 ft; Walker Bros. 2, S. Seal sur, dr 995 ft. Billard & Whitting et al's Mrs. A. C. Bridges Est. 1, S. Seal sur, 2 mi w Luling, lcn.

CALHOUN COUNTY — Continental Oil Co.'s American National Realty Co. 2, ne ne sec 6, blk C., P. Garcia sur, dr 5980 ft. Haliburton Oil Co.'s D. Burton 1, M. Sanchez sur, testing 6135 ft. Adrian Moore's McMaster 1, Sanchez sur, mir. Texas Co.'s Bladrone 1, S. Shupe sur, testing 6255 ft (depth approximate); R. Duelberg 1, testing 6276 ft; Martin 1, Florentina Garcia League, coring 6280 ft; W. H. Wehmeyer 1, M. Sanchez sur, td 6336 ft, pb 6259 ft, dst 6248-59 ft, sprayed oil on dst, set 7 in csg 6251 ft, wocs.

DE WITT COUNTY—Stewart & Egan Oil Co.'s R. Kleberg 1, J. J. Tumlinson sur, sd 80 ft.

DUVAL COUNTY—Mills Bennett's Duval County Ranch 2, sec 258, coring 1500 ft. Bridwell Oil Co.'s Sutherland 2, sec 122, sand 2701-18 ft, 7 in csg set 2701 ft, elev 660 ft df, dr out plugs. Harvey & Henderson et al's Chernoskey 1, sec 226, td 2650 ft, pb and completing in sand 2220-26 ft, considerable oil in hole, but will not flow, ru to pump. Intrepid Oil Co.'s Parr Ranch 2, sec 115, dr 3100 ft. Magnolia Pet. Co.'s Bennett 1, sec 441, dr 3568 ft. D. H. O'Byrne et al's Ball 1, sec 3, Agua Poquita Gr, ru. Santa Clara Oil Co.'s Wood-Welder 1, sec 385, set 90 ft sur csg, sd to complete water well. Smith & Hamil's M. C. Hubbard 1, sec 77, sw Loma Novio, dr 2500 ft. Tex-La Oil Corp.'s M. C. Hubbard 1, sec 84, sand 2795-2802 ft, show oil, set csg, wocs.

FRIO COUNTY—Amerada Pet. Co.'s Halff & Oppenheimer 4, A. H. Gibson sur, sec 15, dr 1000 ft; W. H. Smith 1, J. B. Mason sur, dr 900 ft. Shoemaker et al's M. Roach Est. 1, C. Wentzel sur No. 139, dr 3748 ft.

GONZALES COUNTY—Southwestern Dev. Synd.'s W. S. Atkinson 1, S. Y. Reims sur, sd 5700 ft, to deepen.

GUADALUPE COUNTY — Gode et al's Hicks 1, E. de Los Santos Coy sur, sp. A. D. Locke's Mrs. N. S. Lowman 1, Cyrus Campbell League, td 1810 ft, dr 1200 ft in sdtr hole. Minerals Corporation of Texas' Allen Phillips 1, Cortines sur, sd 40 ft after setting sur csg. Suttle et al's Baenzinger 1, A. O. Manchola sur, td 2155 ft, ream to 1784 ft, top chalk, set csg, wocs, will dr out part of cement and acidize. L. E. Trout's Myrtle McKee 1, Green DeWitt sur, coring 3275 ft, top Edwards lime.

HIDALGO COUNTY — Bluff Pet. Co.'s Knowles 1, 300 ft nl and el of s 500 ac sh 14, por 49, 3 mi sw Mission, contract let, prep to mir. D. M. C. Oil Co.'s Daskam 1, blk 34, por 45, td 4114 ft, wait on csg. Ed. H. East, Tr.'s F. M. Carter 1, blk 19, Retama sub, Del Tule gr, dr 1640 ft. Union Sulphur Co.'s American Rio Grande Land & Irrigation Co. 1, Tr, 2297, lot 59, N. Capisallo dist, Llano Grande gr, 1½ mi ne Mercedes discovery well, td 6431 ft, owdd, ds stuck in bottom of hole, re-instate to sdtr and dr deeper, dk up, wait on rig; American Rio Grande Land & Irrigation Co. 2, lot 2082, blk 86, N. Capisallo dist., Llano Grande gr, 300 ft se discovery, td 8044 ft, ds twisted off 2629 ft, recover to about 5400 ft, owdd, to sidetrack and dd.

JACKSON COUNTY—Shell Pet. Corp.'s McCrory 1, sec 15, Morris & Cummings sur, dr 6325 ft.

JIM HOGG COUNTY—Darby Pet. Co.'s Holbein 1, 300 ft sl and wl blk 5, Los Animas gr, lcn. French Oil Corp.'s East 2, 330 ft nel and nel blk 74, sh 2, Moritas gr, prep to sp. Miller et al's Yeager 1, blk 6, sur 20, dr 3378 ft. Sun Oil Co.'s T. T. East 1, blk 18, sh 5, Santo Domingo De Arriba gr, dr 3625 ft.

JIM WELLS COUNTY—A. M. Hagan et al's Robt. Adams 1, sec 10, mir. O. W. Killam's W. D. Wade 6, blk D, S. A. Agua Dulce gr, ru. Magnolia Pet. Co.'s A. A. Seeligson 6, V. Canale sur No. 218, dr 4710 ft. Smith & Storey's Schaeffer 1, S. Bigham sur, td 771 ft, move in heavier rig.

KARNES COUNTY—American Liberty Oil Co.'s Wolfmuller 1, J. Johnson sur, td 3475 ft, pb 3298 ft, top sand 3292 ft, set csg, wocs. Luling O&G Co.'s W. W. Boyce 1, S. D. Still sur, dr 3350 ft. H. A. Pagenkopf's McAda 1, Carlos Martinez sur, dr 5008 ft.

KERR COUNTY—Jeff Love & Eastland Oil Co.'s Jeff Love 5-E, J. Martinez sur, sec 1594, dr 5450 ft.

LA SALLE COUNTY—S. Killingsworth's L. Yeager 1, lot 10, blk 5, sur 94, dr 1830 ft.

LAVACA COUNTY—L. A. Douglas's Fehrenkamp 1, M. Mitchell sur, dr 2795 ft.

LIVE OAK COUNTY—Baugh & McMillan's Walton & Campbell 1, D. R. Fant sur, td 3214 ft, ru to dd. Henderson Coquat's L. Reagan 1, McGloin sur, set sur csg, wocs; H. E. Rex 1, GH&H sur No. 1, coring 3590 ft. Darby Pet. Co.'s McNeill 1, lot 4, GH&H sur, se McNeill field, dk, mir. Feltner, Lefevre & Spice's Carter Inv. Co. 1, 330 ft sl and wl ne sec 299, Hooper & Wade sur, lcn, contract let, prep to mir. Houston Oil Co.'s Cartwright 32, M. Trudo sur, dr 4263 ft, show oil. Marine Oil Co.'s E. S. Adair 1, J. McGloin sur, sp. Smith & Story's Nueces Valley Townsite, Jane Curry sur, dr 3700 ft. J. O. Whittington et al's Little 1, td 5738 ft, showing gas and oil through perforations 4227-55 ft, trying to comp.

McMULLEN COUNTY—Brown & Nesley's Worley 1, M. O'Boyle sur, 850 ft nwl, 7500 ft fr n cor of sur, 2 mi nw Calliham, dr 625 ft. Henderson Coquat's Ezzell 1, 2000 ft sel and midway between nel and swl of D. R. Fant sur, sd 606 ft. Hall et al's Claunch 1, M. Hely sur, td 784 ft, sand 747-53 and 777-84 ft, both show gas, prep to comp. Howard & Carpenter's Jungman 1, M. Hely sur, 950 ft sl, 1030 ft el of 300-ac tr, 1 mi nw S. Calliham field, dr 675 ft. Howeth & Swiger's W. H. Rhodes Ranch 1, M. F. Lowe sur, sec 22, dr 3240 ft. John Gibson's G. C. West 1, 150 ft e and 1200 ft s of nw cor lot 1, blk 4, sec 16, HT&B Ry. sur, Ab 1092, 5 mi sw Tilden, Mirando sand 404-12 ft, show oil, dd. C. C. Shumway et al's Shiner Ranch 8, making lcn. Texio Oil Co.'s Atkinson 1, sw sw sec 13, M. J. Dean sur, set 60 ft 10 in sur csg, re-dr. Hy. E. Young's Cox 8-A, M. Hely sur, top sand 1069 ft, coring.

MEDINA COUNTY—Joe Deupree et al's Hugo Batot 1, 258 ft el, 957 ft nl of 160 ac tr in John Ball sur No. 1478, 8 mi sw Hondo, dr 170 ft, blue shale (this replaces Dupree & West's Mott 1) W. T. Shoemaker et al's Noonan 1, Alsbury sur No. 350, 3 mi se Dunlay, sd 450 ft, to move on new rig.

NUECES COUNTY—A. F. Holliday's Stillwell 2, blk 31, Sheppard Farm Lots, td 996 ft, fsh. Southern Minerals Corp.'s Rand Morgan 1, lot 29, T. T. Elliott Farm Lots sur, dr 3785 ft.

REAL COUNTY—H. J. Heartwell et al's L. J. Haby 2, sec 175, AB&M sur, temp sd 3056 ft.

REFUGIO COUNTY—Temple Hargrove et al's Weiss 1 (shown by some as Conroe Drlg. Co)., ne nw sec 40, Bonnie View sub, dr 3650 ft. Humble O&R Co.'s Mrs. M. M. Marberry 1, J. Dun sur, dr 4489 ft, hard sand, topped sand 4420 ft, show some oil on dst. Magnolia Pet. Co.'s Mattie Woods 1, S. Turner sur, dr 6658 ft, gassing from shallower sands.

SAN PATRICIO COUNTY — Continental Oil Co. & Atkins & O'Neil's J. F. Welder 3, 466 ft s, 150 ft w of se cor of Anthony tr, Juan Hart gr, ne Angelita discovery well, lcn. Heep Oil Corp.'s E. H. Welder 1-C (shown by some as 1-E) sec 46, Welder sub, old maps show R. Montgomery sur, dr 4705 ft; Welder 1-D, CJF&E Portillo sur, mir. A. E. Masterson et al's Wurzbach 1, C. C. Hornsby sur, td 5521 ft, deal being made to dd. Plymouth Oil Co.'s Welder 3-A, J. M. Portillo sur, td 5437 ft, attempts to set packer to cut off high gas pressure failed, may dd; Welder 2-C, 1320 ft due e of No. 1-C, Morrow sur, ru; Welder 3-C, 1256 ft due n 1-C, Morrow sur, ru; Welder 1-D, 466 ft nl and wl of 1300-ac D, Lease Portillo sur, ne Sinton townsite, ru.

STARR COUNTY—Armstrong, Emanuels & Adams' Starr County Cattle Co. 1, blk 57, J. L. sub, por 89, td 2715 ft, will perf liner to comp. C. R. Borah et al's A. Guerra 1, sh 6, San Jose gr, dr 3035 ft in sh and rock. John Clopton's D. L. Tijerina 1, blk 14, sh 14-C, por 80, td 1750 ft, ru to dd; Kelsey Bass 1, 330 ft sl and el blk 5, sec 10, por 86, dk, mir, lay water line. Conroe Drlg. Co.'s Guerra 1-A, blk 35, Crawford sub, por 56, dr 2700 ft. H. L. Curry, Kelsey Bass 2, sh 8, por 77, dr 1198 ft. Hughston Oil Co.'s Wood-Gregg 1, por 84, dr 471 ft. Hiriam Reed's Block Bros. 1, Tr. 28-A, por 80, td 1500 ft, prep to dd. Sun Oil Co. & Humble O&R Co.'s Mantor & Briggs 1, nw nw sec 53, set 205 ft sur csg, wocs. Sunray Oil Co.'s Munoz 1, por 75, dr 3850 ft.

TRAVIS COUNTY—J. M. Hickey's A. Lind 1, M. Winburn sur, dr 1100 ft, top Serpentine 825 ft.

VICTORIA COUNTY—Costa Oil Co.'s J. E. Schovajsa 1, lot 14, Rupley sur, dr 3650 ft. Gillespie & Superior's Brandt 1, Rupley sur, lot 11, ru, corrected report; Henderson & Pickering (now Farber) 2, lot 6, Nancy Dean sur, fsh 4808 ft. Houston Oil Co.'s Fagan 1, F. & J. M. Rodriguez sur, ru. Magnolia Pet. Co.'s Henderson & Pickering 1, E. Benavides sur, ru. The Texas Co.'s A. M. McFaddin 9, J M. Rine sur, td 3643 ft, set 9 in csg to td, wocs. Trans-State Oil Co.'s Robt. Kanster 1, R. Manchola gr, west side Coleto Creek field, sp.

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Trust's Benavides 11, ne sec 683, sand showing oil 4974-4993 ft, td 4993 ft, swabbing. Carolina-Texas Oil Co.'s Barnhart 1, sec 262, de la Garza sur, fsh 2404 ft. Payne et al's Hoggterp 1, blk 6, sec 110, dr 1920 ft. Arthur H. Wray's Geo. Stuempke 1, sh 1, Brewster Pasture, J. Galan gr, dr abt 875 ft.

WILLACY COUNTY—Kingwood Oil Co.'s Stillman Ranch 1, lot 16, blk 30, sh 44, Stillman Ranch sur, dr 1495 ft. South Texas Dev. Co.'s F. Armendiez 1-A, Little sh 4, re-dr 3835 ft.

WILSON COUNTY—Universal Oil Co.'s O. F. Burney 1-A, replacement hole for Burney 1, junked, Arocha sur, ru.

WILLIAMSON COUNTY—H. T. McGee's Adolph J. Hejl, in 40.75-ac tr, P. Cartwright sur, 4 mi se Taylor, mim. Sam Michalk's Dan Murphy Est. 1, 280-ac tr, CEPL&M sur, 6 mi se Taylor, lcn. J. W. Gabehart & W. D. Stone's Mrs. P. S. Wernli 1, in 96¼-ac tr, P. Cartwright sur, lcn. Hays Gee's Pfluger 2, H. White sur, mim. W. L. Stephens's J. P. Carlson 1, 120-ac tr, S. C. Jones sur, 10 mi sw Taylor, prep to mim. J. A. Harper's Seggern 1, J. Bevil sur No. 56, ru.

ZAPATA COUNTY—Allen & Morris' F. Pena 1, sh 19, por 19, coring 2454 ft. Cox et al's D. Yzaguire 1, sh 17, por 15, dr 550 ft. Danvers & Harrison's N. J. Vela 1, blk 7, Vela sub, por 29, coring 2332 ft. H. C. Dean et al's J. M. G. Martinez 1, blk 34, sh B, W. R. Duke sub, Charco Redondo gr, lcn. Joe Palmer et al's Emma Markrud 1, blk 22, sec 616, lcn. E. L. Smith Oil Co.'s R. Hinnant 1, blk 27, sec 307, ru and sd.

TEXAS GULF COAST

ANGELINA COUNTY—Hunter Co.'s Long-Bell 1, six mi se of Huntington, J. Durst sur, dr 407 ft. Lee Tex Oil Co.'s A. H. Geisler 1, 1 mi nw of Lay, S. J. Thompson sur, washing to bottom 1120 ft. Pioneer Exploration Co.'s S. L. & B. L. Huffman 1, 6 mi ne of Lufkin, S. Donegan sur, coring shale 1034 ft.

AUSTIN COUNTY—Deering & Kayser's T. A. McClenton 1, se of Bellville, Thos. Bell sur, dr shale 1045 ft.

BRAZORIA COUNTY—Texas Co.'s Freeport Sulphur Co. 1, 2500 ft e of Canal, Areola sur, sd high water 3760 ft. Turnbull & Irwin's Oliva Allison 1, Fresno area, H.&T.C. sur, sec 79, lot 36, sd 6050 ft. Big Creek Oil Co.'s F. Truksa 1-B, s of Alvin, H.&T.B. sur, sec 7, abd 6001 ft.

COLORADO COUNTY — Gulf's A .R. Milentz 1, 1¼ mi ne of Rock Island, I.&G.N. sur. sec 33, dr shale 2715 ft.

CHAMBERS COUNTY — South Gulf Oil Corp.'s R. M. White 1, Luke Bryan sur, dr shale 3675 ft.

GRIMES COUNTY—W. B. Roan et al's G. W. Sealy 1, sw of Kellum Springs, B. F. Smith sur, dr shale 3180 ft.

HARDIN COUNTY—Jack Frazier's Sternenburg 1, nw of Kountz, J. Pearson sur, dr shale 4515 ft.

HARRIS COUNTY—Johnson & Johnson and Stanolind's Fee Land 1, s Houston H.&T.B. sur, reaming 5069 ft. West Prod. Co.'s O. P. Woodburn 1, Genoa, A. Whitlock sur, dr shale 4605 ft.

JASPER COUNTY — Republic Prod. Co.'s Sabine Tram Co. 1, ne of Buna, H.&T.C. sur, sec 71, abd 7615 ft.

LIBERTY COUNTY—Liberty Independent Oil Co.'s J. M. Neal 1, S. Strong sur, dr shale 4080 ft.

MATAGORDA COUNTY — Continental's Feife 1, Citrus Grove, J. S. Chriswell sur, dk. H. M. Smith's Wadsworth 1, S. R. Fisher sur, lot 3, blk 5, dr shale 7370 ft.

MONTGOMERY COUNTY—Gholson et al's A. Parker 1, nw of Willis, J. Lindley sur, dr shale 2305 ft. W. C. Keeble's T. S. Foster 1, J. M. De La Garza sur 11, dr 5031 ft.

ORANGE COUNTY—T. S. Ruff's Kaulback 1, 4 mi e of Beaumont, J. Armstrong sur, drill stem stuck 2110 ft. Ellis Oil Co.'s G. W. Pell 1, e of Terry, J. M. McHernie sur, dr 1950 ft.

POLK COUNTY—Humble's Tex. L. L. L. Co. 1, e of Goodrich, A. Viesca sur, coring shale 3205 ft.

SAN JACINTO COUNTY—Shell's Moore 1, J .D. Martinez No. 3 sur, dk.

WALKER COUNTY—S. E. Grey's C. Weinzell 1, se of Riverside, J. J. Porter sur, dr 2008 ft, sdtr 1300 ft.

WASHINGTON COUNTY — Powers Prod. Co.'s Boenker 1, w of Washington, J. Newman sur, mim.

WHARTON COUNTY—Texas Co.'s Pierce Estate 2-A, I&G.N. sur, sec 39, dr gumbo 750 ft.

LOUISIANA COAST

ACADIA PARISH—Humble's Rice Milling Co. 1, s of Crowley field, sec 27-10s-2e, dr shale 7986 ft. Continental's Ortigo 1, nw of Iota, sec 28-7s-2w, ru.

AVOYELLES PARISH — Southern Star Pet. Co.'s I. G. Boyette 1, sec 28-3n-5e, sd 3775 ft.

BEAUREGARD PARISH—C. & K. Dr. Co.'s Long-Bell Lbr. Co. 1, w of Ludington, sec 26-2s-8w, dr shale 2880 ft.

CALCASIEU PARISH—Michols McCaleb's Gray 1, 9 mi nw of Starks field, sec 22-8s-13w, sd 860 ft. Buhler Oil Co.'s Faist 2, 900 ft se of No. 1, sec 26-8s-10w, dr shale 2425 ft. Wheeler Oil Co.'s School Land 1, s of Iowa field, sec 16-9s-7w, dr 1100 ft.

CAMERON PARISH—Magnolia's Broussard 1, sec 13-12s-9w, dr shale 8570 ft.

EAST BATON ROUGE PARISH—Superior's Duplantier Community 1, University blk, sec 65-7s-1w, dr shale 3051 ft.

EVANGELINE PARISH—Basile Oil Co.'s Haas 1, se of Hampton, sec 14-6s-2w, woc 1363 ft.

IBERIA PARISH—Texas Co.'s State Lake Fausse Point 1, s flank of dome, sec 35-11s-8e, dr shale 4053 ft.

JEFFERSON PARISH—Lincoln Oil Co.'s Rigaud 1, Grand Island, sec 28-21s-25e, abd 7039 ft. Texas Co.'s Bayou St. Denis 1, 6 mi se of Lafite, sec 19-17s-24e, woc to set 9572 ft.

ST. BERNARD PARISH — Emerald Pet. Co.'s Shell Beach Properties 1, on s edge of Bayou Louis, sec 31-13s-15e, dr sand 410 ft. John Danciger's Battles 1, near Oliver, sec 135-14s-14e, reaming 6504 ft.

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ST. MARTIN PARISH—Texas Co.'s State Blum Bob 1, Henderson prospect, sec 9-8s-7e, dr shale 7431 ft.

TANGIPAHOA PARISH—R. A. Conklin's Lake Superior Piling Co. 1, sec 19-5s-9e, sd 4539 ft.

NORTH LOUISIANA

BIENVILLE PARISH—N. V. Duncan et al's J. Hutton 2, nw ne sw 4-18n-7w, dr 2310 ft. Saline Drilling Co.'s Pardee 1, ne ne 27-14n-6w, sd 3819 ft, shale.

BOSSIER PARISH—W. A. Kirklin, Tr.'s Garrett & McKellar 1, se nw nw 3-21n-13w, dr 1790 ft. Plain Dealing Synd.'s L. A. King 1, nw ne ne 36-23n-13w, spd dr 305 ft. Richplain Oil Co.'s Gaines 1, nw nw 22-22n-13w, wocs 10-in csg 42 ft.

CADDO PARISH—Ed Bailey et al's Hartzo 1, ne nw 28-22n-15w, sd 1230 ft. W. T. Bell et al's Bostick 1, sw sw 12-22n-16w, sd 2780 ft. Simplex Oil Co.'s Keith 1, sw se 18-20n-14w, dr 1780 ft. A. F. Tarver's George 1, sw ne ne 23-19n-15w, cored 4 ft sand showing oil 2420-24 ft, arr set 6-in csg td 2428 ft.

CALDWELL PARISH—Critchett & Wood's La. Cent. Lbr. Co. 1, se nw ne 18-11n-3e, spd 10-in csg cemtd 133 ft. G. W. Zeigen et al's La. Cent. Lbr. Co. 1, nw sw sw 25-13n-3e, rur.

CATAHOULA PARISH—Phillipi et al's La. Cent. Lbr. Co. A-1, 2-9n-6e, wocs 6-in csg 820 ft.

CLAIBORNE PARISH — K. C. Bundy's King 1, 12-21n-7w, lcn abn. E. T. Oakes et al's Patton Est. 1, ne ne 1-20n-5w, rur.

DE SOTO PARISH—E. B. Bird et al's A. D. Johns, Jr. 1, se nw 20-14n-16w, elev 290 ft, top Nacatosh 1229 ft, base Annona chalk 1907 ft, top Blossom 2105 ft, tested 6 joints oil, cemented 6-in csg 2583 ft, td 2813 ft. (SLM corrected depth). Century Oil & Drlg. Corp.'s J. M. Norton 1, sw ne 27-11n-14w, si, td 2825 ft. Flesh & Hootkins' J. S. Farmer 1, nw se ne 14-12n-14w, 10-in csg 150 ft, dr 1110 ft. P. G. Frailey et al's J. E. Stell 1, 5-12n-16w, rur. Ed Saffold et al's T. D. Thigpen 1, nw sw ne 33-13n-13w, spd dr 855 ft.

EAST CARROLL PARISH—Century Oil & Drlg. Corp.'s Olivedell Pltg. Co. 1, 56-21n-12e, wocs 10-in csg 285 ft. O. G. Collins et al's H. L. Hunt 1, cent 26-22n-13e, rur.

MADISON PARISH — Southern Land & Expl. Co.'s Deltic Inv. Co. 1, nw nw 1-17n-12e, dk and mir.

MOREHOUSE PARISH—C. I. Bacon et al's Crosett Lbr .Co. 2, se sw 36-23n-6e, dk. Alex Rice, Tr.'s Meyers 1, nw se nw 15-22n-7e, dr 2435 ft.

NATCHITOCHES PARISH—Clyde Creighton's Friedman Est. 1, swc 52-7n-6w, claim so, washing to bot to make ds test, td 2947 ft. Edwards & Turner's Prudential Life Ins. Co. 1, nw nw 26-10n-6w, dk. Leslie Prod. Co.'s Tom Moffitt 1, se nw 19-10n-10w, lcn. Missouri Drlg. Co.'s Brown Lbr. Co. 1, 5-10n-10w, co to deepen td 1035 ft. B. E. Taylor's De Bleiux 1, nwc 83-10n-7w, rur.

RED RIVER PARISH—Sterling O&G Co.'s Long-Bell Lbr. Co. 1, se ne se 19-13n-9w, sd repr rig, td 2930 ft.

SABINE PARISH—M. T. Hines' J. B. Hill 1, sw ne 4-6n-11w, sd 2260 ft. Laurel Pet. Co.'s Long-Bell Lbr. Co. 1, sw sw 14-8n-14w, top Zwolle marl 1763 ft, wocs 7-in csg at 1791 ft, td 1795 ft.

WEBSTER PARISH—Virgil Likens' E. L. Stewart 1, nw nw 25-18n-10w, dr 2020 ft. Geo. W. Weatherbee et al's Clark 1, nw ne se 1-18n-10w, lcn abnd.

ARKANSAS

ASHLEY COUNTY—Glen E. McFadin et al's Bovine Farms 1, ne ne 1-18-8w, elev 178 ft, Nacatosh sand 2767-80 ft, arr go over hung ds with csg, td 2798 ft, shale.

CALHOUN COUNTY—The Hunter Co.'s Stout Lbr. Co. 1, nw ne 33-16-13, rur.

COLUMBIA COUNTY — Southern States Gas Co.'s Pine Woods Lbr. Co. 1, sw ne nw 10-20-22, sd 950 ft.

GRANT COUNTY—Neill & Winters' R. W. Cooper 1, sw se 26-6s-15w, sd 1710 ft.

HEMPSTEAD COUNTY—F. W. Martin et al's A. J. Lafferty 2, se nw 17-14-24, dk.

LA FAYETTE COUNTY—W. H. Harvey's R. F. Allen 1, ne se sw 13-19-25, dk. Larry Romine's Nolte 1, ne ne nw 11-19-26, spd dr 100 ft. S. H. Riggs et al's DuBose 1, se sw nw 35-15-24, dr 2520 ft. Transportation Pet. Co.'s Cochran Est. 1, ne se 25-19-25, lcn. Red River Lbr. Co. 1, sw sw 26-19-25, elev 250 ft, top Nacatosh 1804 ft, top Blossom 2740 ft, dr 3365 ft.

LONOKE COUNTY—J. C. Strahan's Hardin 1, nw nw 18-2s-7w, fsg, td 2323 ft.

MILLER COUNTY—C. J. Hodges et al's Commercial Nat. Bank 1, sw ne se 30-17-28, dk. King Oil Corp.'s E. G. Anderson 1, nw sw ne 16-14-27, tested dry in ds test 2208 ft, dr 2215 ft. Lee Timberlake et al's Frost Lbr. Co. 1, sw sw se 27-15-26, sd 3097 ft.

NEVADA COUNTY—Carnett et al's Floyd Munn 1, 16-14-22, sd 50 ft.

OUACHITA COUNTY—Steele et al's Myar Est. 1, 16-13-18, wocs 10-in csg 100 ft.

SEVIER COUNTY—Pendleton & Vaughn's Fee 1, nw se 35-9s-30w, dk. Harris Est. 1, 34-9s-30w, fsg for bit, td 1320 ft.

UNION COUNTY—Gulf Ref. Co.'s Werner Lbr. Co. 49, sw nw sw 5-16-16, 10-in csg 2293 ft, dr stem recovered after lubricating, arr deepen td 5650 ft, hd red sandy shale (corrected depth). H. L. Hunt, Inc.'s E. F. Gregory 15, se se 10-17-14, elev 180.4 ft, 7-in csg 5834 ft, base red beds 5937 ft, top Permian salt 6816 ft, pb to 4000 ft, tested sw 3450 ft, Taylor sand, sd old td 6911 ft, salt. Joe Modisett et al's D. G. Sturdivant 1, se se 6-18-13, sd 4016 ft, sandy shale. E. O. Olds' Telford 1, nw nw 35-17-15, wosr, td 2211 ft.

TENNESSEE

FAYETTE COUNTY—Hay-Fay Oil & Gas Co.'s Morrison 1 (1 mi n Laconia), arr deepen, td 2500 ft hd lime rock. Anderson & Kerr's Lesley 1 (near La Grange), rur for new hole.

HAYWOOD COUNTY—E. Randall Henderson's Jarrett 2 (1½ mi s Brownsville), dr 3000 ft.

ALABAMA

COVINGTON COUNTY—Geometer Prod. Co.'s A. B. Culbreth 1, sw sw ne 8-2n-14e, sd 5605 ft, repr rig.

HOUSTON COUNTY — Rice O&G Co.'s Oakley Est. 1, sw nw sw 9-3n-29e, sd 2750 ft, upper Tuscaloosa.

LAMAR COUNTY — DeSoto O&G Co.'s Gardner 1, nw nw 22-15s-16w, dr 4220 ft.

FLORIDA

HILLSBOROUGH COUNTY — Southern Pet. Co.'s Mizell & Williams 1, 4-32s-25e, elev 120 ft, re-conditioning hole, td 2100 ft.

LAKE COUNTY—Oil Dev. Co. of Fla.'s Gulf Expl. Co. 1, se se 17-24s-25e, elev 110 ft, re-landing 12-in csg at 435 ft.

MISSISSIPPI

BOLIVAR COUNTY—White & Jones' Ballou 1, sw ne ne 18-24n-7w, dr 540 ft.

CLARKE COUNTY—L. Beckwith et al's Long-Bell 1, sw se 10-2n-16e, elev 378 ft, ru and sd.

JONES COUNTY—Snow-Black Pet. Co.'s Fox 1, se se sw 30-7n-12w, hole cleaned, dr 4050 ft.

MADISON COUNTY—Cleve Love et al's P. F. Simpson 1, nw nw 30-8n-1w, lcn.

MONROE COUNTY—P. J. McAlpine et al's Crook 1, ne ne 4-13s-18w, dr sw sand 2485 ft.

RANKIN COUNTY — Cleve Love et al's Boehle 1, nw ne 18-5n-2e, elev 275 ft, top Cane River 720 ft, top Wilcox 1030 ft, top Midway Chalk 2442 ft, cemtd 6-in csg 2442 ft.

SIMPSON COUNTY—Berry Corp.'s Berry 2, sw sw 33-2n-4e, elev 302 ft, sd 2505 ft for fuel.

STONE COUNTY—Gulf Ref. Co.'s Dantzler Lbr. Co. 7, se se 36-3s-11w, elev 170 ft, 7-in OD csg 5470 ft, fsh 3-in drill pipe 6192 ft.

WARREN COUNTY—Harry W. Elliott's R. L. Parker 2, nw nw 14-14n-1e, elev 80 ft, sd high water 1602 ft.

WASHINGTON COUNTY — Mid-Continent Developments' Lee 1, 33-15n-8w, dr 1260 ft.

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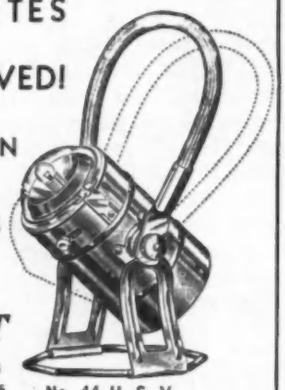

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MICHIGAN

MIDLAND COUNTY—J. V. Wicklund's Neal 1, 16n-2w-13, testing 4026 ft. Goll-Graves-Mechling's Oviatt 1, 16n-2e-24, dr 3200 ft. Atha Oil Co.'s LaLonde 1, 13n-1e-27, testing 3490 ft.

ISABELLA COUNTY — McClanahan Oil Co.'s McRae 1, 15n-3w-13, sp. United Driller's Vandercook 1, 15n-3w-24, dr 1300 ft.

OGEMAW COUNTY—Thompson Brothers' Mills Estate 1, 21n-4e-31, dr 2200 ft. Lupton Oil Co.'s Rakestraw 1, 24n-3e-35, lcn.

MONTCALM COUNTY—L. E. Duvall's Eiknorch 1, 11n-10w-13, sd 1343 ft. Fred Turner et al's Conkie 1, 10n-5w-10, dr 260 ft. T. F. Caldwell's Robins 1, 10n-5w-3, dr 370 ft; Ingersol 1, 10n-5w-14, dr 100 ft. Gordon Oil Co.'s Frost 1, 10n-5w-3, lost first hole 380 ft, skidded, sp; Smith 1, 10n-5w-1, dr 850 ft. McClanahan Oil Co.'s Flint 1, 10n-5w-11, dr 890 ft. J. W. Leonard, Jr.'s West 1, 10n-5w-11, dr 1550 ft; West 2, 10n-5w-2, std 750 ft; West 3, 10n-5w-11, lcn. Eastern Gulf's Barger 1, 10n-5w-2, dr 1900 ft; Florence 1, 10n-5w, se ne sw-2; Florence 2, 10n-5w, ne ne nw-2; Curtis 1, 10n-5w, nw nw sw-12; Beulah 1, 10n-5w, sw nw sw-1; Barger 2, 10n-5w, nw sw se-2; Martha 1, 10n-5w, sw ne nw-1; Fisher 1, 10n-5w, nw nw ne-2; Race 1, 10n-5w, se nw se-2; Race 2, 10n-5w, sw nw se-2, lcns.

Daily Crude Oil Co.'s Tow 1, 10n-5w-2, dr 1300 ft. Rowmor Oil Co.'s Durbin 1, 10n-5w-2, ru; Barger 1, 10n-5w-10, lcn. Burnstein Oil Co.'s Keel 1, 11n-5w-35, sp. C. R. Gallagher's Lindsay 1, 10n-5w-13, lcn. Taggart Brothers' Smith 1, 10n-5w-1, dr 2510 ft; Smith 2, 10n-5w-1, rig. L. G. Thompson's Knapp 1, 12n-9w-17, dr 1600 ft.

V. M. Voorhee's Smith 1, 10n-5w, ne ne nw-10, lcn. Stork Oil Co.'s Dickerson 1, 10n-5w, sw sw se-3, rig. Snowden and McSweeney's Wight 1, 10n-5w, ne ne ne-10, rig.

Crystal Oil Syndicate's Drake 1, 10n-5w, sw nw ne-3, lcn; Drake 2, 10n-5w, nw nw ne-3, lcn; Denman 1, 10n-5w, se ne ne-13, lcn; Denman 2, 10n-5w, sw ne ne-13 lcn; Youmans 1, 10n-5w, ne nw nw-14, lcn; Youmans 2, 10n-5w, nw nw nw-14, lcn; McCracken 1, 10n-5w, nw nw se-9, lcn; McCracken 2, 10n-5w, ne nw se-9, lcn; Lute 1, 10n-5w, ne ne sw-15, lcn; Lute 2, 10n-5w, nw ne sw-15, lcn.

GRATIOT COUNTY—Mammoth Petroleum Co.'s Graham 1, 11n-4w-31, sg 973 ft, dr 1050 ft. Newark Oil Co.'s Beck 1, 10n-3w-29, dr 420 ft. Wicker and Munger's Kellog 1, 10n-3w-17, lcn. Kelly & Evans' Pencak 1, 10n-4w-18, dr 965 ft. T. F. Caldwell's Land Bank 1, 10n-4w-18, ru. Kircher & Moffett's Shaver 1, 10n-4w-4, dr 700 ft. Strange & Fortney's Bovee 1, 10n-4w-7, sp. McClanahan Oil Co.'s Akin 1, 10n-4w-17, dr 365 ft. Rex Oil and Gas Co.'s Biddle 1, 10n-4w-20, br.

GLADWIN COUNTY — M. F. Whitehill's Spicer 1, 17n-2w-11, dr 3890 ft. Beaverton Oil and Gas Co.'s Ross 1, 17n-1w,7, sd 3790 ft. Sun Oil Co.'s Hines 1, 17n-1w-31, dr 3835 ft, sg&o. Strange Oil & Gas Co.'s Spicer 1, 17n-2w-11, rig.

MECOSTA COUNTY—Jetter Oil Co.'s Parsley 1, 14n-10w-19, dr 875 ft. Columbia Oil & Gas Co.'s Freeman 1, 13n-8w-1, sd 1300 ft. Jasmid Oil Co.'s Coopersville Bank 1, 13n-10w-22, sd 850 ft. Sherman Drilling Co.'s Sheibe 1, 15n-7w-13, sd 850 ft.

CLARE COUNTY—Sun Oil Co.'s Becker 1, 18n-3w-2, dr 1950 ft. Farmwell Oil Co.'s Siegel 1, 17n-5w-26, rig.

MISC.—Saginaw County: Chapin Oil Co.'s Sutlif 1, 9n-1e-16, sd 2926 ft. Wexford County: M. J. Ingold's Webb 1, 22n-9w-13, dr 850 ft. Osceola County: Smith Petroleum Co.'s Moser 1, 17n-10w-20, dr 75 ft. Shiawassee County: D. H. Dornnell's Hardy 1, 6n-4e-7, so 1820 ft, sd. Macomb County: H. H. Brown's Bowerk 1, 3n-14e-29, dr 1760 ft.

COMPRESSOR WANTED
8 x 4 x 8 Horizontal Ingersoll-Rand Compressor or one capable of handling about 150,000 cubic feet per day to 250-lb. pressure. State exact location, condition, size, make and best cash price. Address Box 1700, Care The Oil Weekly, Houston, Texas.

Electrodes

Metal & Thermit Corporation, 120 Broadway, New York, has ready for distribution an interesting 16-page booklet describing the heavy mineral coated electrodes it manufactures.

SUCKER ROD SELECTION

The S. M. Jones Company, Toledo and Tulsa, has just published a booklet entitled "The Relation of Pumping Conditions to Sucker Rod Selection." This booklet is primarily an engineering document designed to put in print a few simple fundamentals that are essential to satisfactory sucker rod performance. Factors concerning Jones products have been in the booklet, which is not a catalog.

Page 1 details a brief history, high-spotting some of the reasons why pumping conditions have changed and brought the industry to its present complex sucker rod problems. Page 2 is a simple statement of the need for establishing a "method" or "practice" for fitting sucker rods to pumping conditions and calls attention to two principal factors that will help clarify these problems. On page 3 is detailed a tabulation or suggested method for selecting sucker rods to fit the four principal pumping conditions. This, of course, can be broken down further as individual needs may indicate advisable.

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have proved through
36 *Years of Service*
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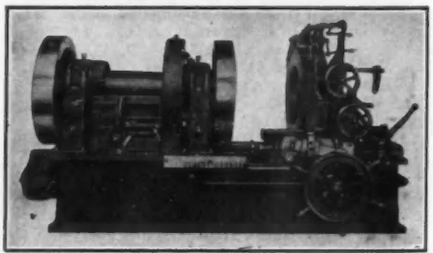

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CHARLIE HARTER

NEWS *from the* *Industry's* EQUIPMENT MAKERS

Axelson Argentine Representative Visits Plant

John R. Webb, representative of Axelson Manufacturing Company, in Buenos Aires, Argentine, is now at the Los Angeles plant of the Axelson organization. Mr. Webb, who made the entire trip from Buenos Aires to New York City and from there to Los Angeles by plane, is familiarizing himself with the latest manufacturing methods and oil field procedure in both California and the Mid-Continent.

Mr. Webb, a California man, has been associated with the oil industry for many years and is well known to oil operators in the United States and foreign countries. His reports on Argentine conditions indicate a material business improvement in this particular section of the world oil fields.

CARL O. HEDNER

Carl O. Hedner Heads Electric Hoist Association

At a recent meeting of the Electric Hoist Manufacturers Association, Carl O. Hedner of The Yale & Towne Manufacturing Company, Philadelphia Division, was elected to the office of chairman.

Mr. Hedner joined the Yale & Towne organization in 1923 and was appointed district manager of the southeastern territory selling materials handling equipment to industry. He directed sales in his assigned territory with notable results and later was brought into the home office as manager of sales of chain hoists and allied overhead hoisting and conveying equipment, a position which he still holds.

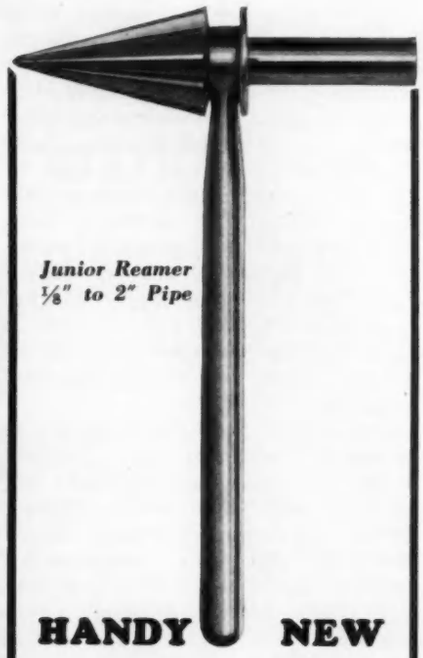
The broad experience which Mr. Hedner has enjoyed, both as a salesman in the field and as a director of sales makes him especially well equipped to successfully administer the affairs of the Electric Hoist Manufacturers Association. He is a tireless worker, alert to every opportunity for progressive action and this, combined with his natural energy and enthusiasm, will constitute a valuable asset to the association.

V. WEAVER SMITH

V. Weaver Smith Joins Broderick Manufacturing Co.

V. Weaver Smith, prominent for the past ten years in connection with heat engineering problems of the oil industry, became vice president in charge of the business activities of Broderick Manufacturing Company, Muncie, Indiana, effective May 1. He has resigned his position as assistant to the president and head of the oil heater department of The Lummus Company, New York.

Following a number of years of chemical experience during the World War period and four years as works manager of Atlantic Tar and Chemical Works, Ltd., Elizabeth, New Jersey,



Junior Reamer 1/8" to 2" Pipe

HANDY NEW TOLEDOS

A new "TOLEDO" Pipe Reamer for 1/8" to 2" pipe, and three new Open Side Pipe Vises. No. 00 Vise holds 1/8" to 1 1/2" pipe, No. 0 Vise holds 1/8" to 2 1/2" pipe, No. 3 Vise holds 1/8" to 4 1/2" pipe.

The same high standard of quality and workmanship.

"TOLEDO" Reamers ream burrs from end of pipe quickly and easily. Open side vises save time and hold all pipe, brass, iron or steel securely.

See these new items at your dealers.

THE TOLEDO PIPE THREADING MACHINE CO. TOLEDO, OHIO

New York Office, 72 Lafayette St.

"TOLEDO"

Open-Side Pipe Vises

Mr. Smith entered the industrial steam engineering field with Superheater Company in 1926. While with this organization, he introduced and developed the application of superheated steam in the cottonseed oil industry. Later he directed a series of field tests on the use of superheated steam in drilling oil wells. The results of these tests, presented in a paper before the National Petroleum Meeting of the American Society of Mechanical Engineers in October 1930, provided a basis for the important place in the industry which this development later assumed.

Mr. Smith's work on oil heaters in connection with petroleum refining while with Superheater Company also was of wide industrial significance. When The Lummus Company was acquired by Superheater Company and Babcock and Wilcox Company in 1930, Mr. Smith became assistant to the president of Lummus and continued in charge of the work on oil heaters.

The Broderick Company is the oldest and largest manufacturer of oil country boilers, having been supplying equipment to the oil production industry for 47 years. It now intends to extend its activities, and Mr. Smith will direct this work.

Erwin Burns Is Made General Manager of Baash-Ross Company

Erwin Burns, effective May 1, was promoted to the position of general manager of Baash-Ross Tool Company. This is in addition to his title of vice president, conferred upon him in 1932.

ERWIN BURNS

During the period of 14 years, Mr. Burns has taken several advancing steps in the company. In 1921 he joined the concern as a young mechanic at Brea, California. L. F. Baash, president, placed him in charge of the company's shop at Rosecrans in 1925. He became general machine night foreman at the headquarters plant at Los Angeles in 1927. The next year he was made superintendent of production. In 1930, Mr. Burns was appointed assistant general manager and in 1932 became a vice president, continuing his duties as assistant general manager.

J. E. Holveck Joins Worthington Pump and Machinery Corporation

Worthington Pump and Machinery Corporation announces the appointment of J. E. Holveck as special sales engineer, operating from its Pittsburgh office but extending his activities also to the territories of the Cleveland, Detroit, Chicago and Buffalo offices.

Mr. Holveck formerly was a member of the engineering staff of Worthington's Holyoke works and later was associated with The Aldrich Pump Company as sales engineer in its Pittsburgh and middle west districts.

He has been responsible for many developments in pumping equipment and hydraulic accessories, principally associated with high-pressure applications. These have been utilized mainly in industries requiring hydraulic power as a medium of production and include high pressure boiler feeding and oil industry applications.

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Pipe Line Coating

Is not affected by electrolysis. Whether applied hot or cold, it dries quickly, will not break down or run under continuous heat. It will not peel off, and cannot be eaten away by acid fumes. It's the best protective coating on the market today, and we welcome the opportunity to prove the above claims.

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New Equipment for the Field

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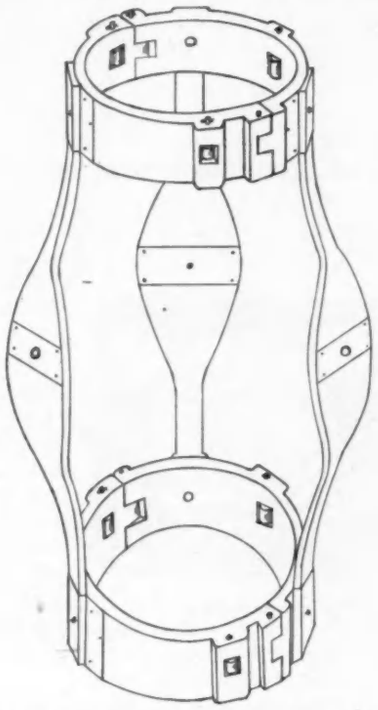
▼ ▼ ▼

Drill Pipe Protector

JOHN H. CUSHING

John H. Cushing, 1482 Garfield Avenue, Pasadena, California, has developed and patented a new type drill pipe protector and stabilizer designed to protect the pipe from wear and undue stress at the joints, and to steady the drill pipe and eliminate "whip" during drilling operations. This is accomplished through reduction of vibration, which in turn overcomes crystalization of the pipe and threads, according to the designer.



Cushing Drill Pipe Protector and Stabilizer.

The tool is constructed so that in pulling the drilling string out of the hole, none of the circulating fluid is brought with it. The designer also claims that the protector will help to keep the hole straight during drilling. This is accomplished by placing the tools, one above the other along the full length of the first drill pipe joint above the bit. This solid row of protectors, each with its three-point bearing against the walls of the hole, acts as a bit guide.

The protectors steadies the drill pipe and keeps it centered in the hole, it is claimed. The tool is quickly put on and taken off the drill pipe. By pulling a pin in each one of the rings, the tool is opened and removed. In placing it on the drill pipe, the rings are closed around the pipe and the pins inserted. The tool, or protector, is placed every 40 feet at a tool joint. It is locked over tool joints, one ring being above the upper part of the tool joint, and the other below the lower part.

No iron or steel is used in the protector's construction, with the exception of a few small hardened steel rollers and small hardened steel pins carrying the rollers. The two rings of the tool are made of a non-ductile metal of great strength and non-corrosive qualities. The three springs are of second growth green hickory. They are especially treated with paraffin oil for 24 hours, placed in iron forming moulds and air dried.

Power Pipe Stripping Machine

BUCKEYE TRACTION DITCHER COMPANY

A new pipe stripping machine placed in the field within the past few weeks by Buckeye Traction Ditcher Company, Findlay, Ohio, is attracting attention because of its distinctly new approach to the problem of uncovering pipe lines. This new Buckeye machine makes possible the elimination of hand digging operations and speeds up the work to a remarkable degree.

The Buckeye pipe stripping machine does a complete job, uncovering the pipe so that the raising crew can follow immediately to hoist the pipe in position for cleaning. The machine not only digs down to the pipe, but also plows out the trench on either side of the pipe to a depth of one half the diameter of the pipe, leaving the pipe fully exposed.

The digging mechanism is located directly between the front wheels of the machine and the weight of the digging assembly rides on the uncovered pipe, supported by a concave roller shaped to fit the size of the pipe. By means of a swivel connection to the digging boom, the roller is permitted to follow accurately the contour of the pipe and any misalignment of the machine with the direction of the pipe line is registered immediately on an indicator in front of the operator.

Important, too, is the ease with which the machine digs around saddles, clamps, expansion joints, and other similar obstructions on the pipe, with no danger of damage to the line.

The pipe stripping machine is a distinctly new departure in the field of mechanical ditching and embodies a number of features never before available in a ditching machine. The frame is typical, rigidly braced and all joints hot riveted or welded. Front wheels are 50½ inches in diameter, with 14-

Buckeye Pipe Stripping Machine

Depend on **WILLIAMSPORT**

We have a big story to tell about the performance of this, our latest engineering accomplishment.

Write us today for further information about this line.

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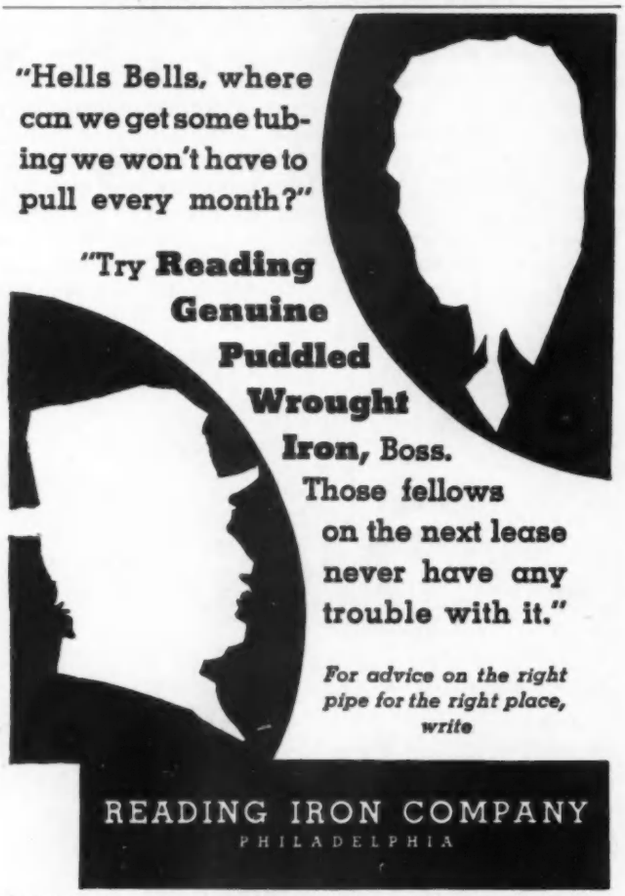


"Hells Bells, where can we get some tubing we won't have to pull every month?"

"Try Reading Genuine Puddled Wrought Iron, Boss. Those fellows on the next lease never have any trouble with it."

For advice on the right pipe for the right place, write

READING IRON COMPANY
PHILADELPHIA

SCIENCE AND INVENTION HAVE NEVER FOUND A SATISFACTORY SUBSTITUTE FOR GENUINE PUDDLED WROUGHT IRON

inch width of tread. The rear alligator wheels have a 13-inch tread with end sprockets 54 inches, center to center, giving approximately 10 square feet of bearing area with bearing pressure of seven pounds per square inch. Steering is effected through standard power steering transmission.

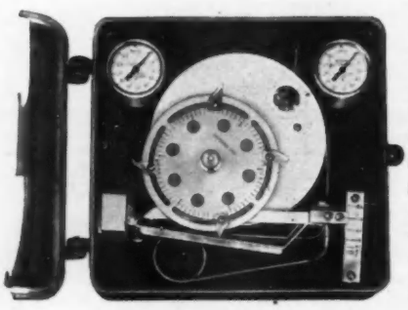
The digging mechanism uses Buckeye type endless chain and self cleaning buckets, operating on a digging boom set in a vertical position and mounted directly back of the front axle. A power hoist raises and lowers the digging boom. When the machine is in operation the weight of this boom is carried by a concave roller that rides the uncovered pipe. Bucket widths are available for trench from 16 inches to 30 inches wide and cutting depth up to four feet is possible with the size machine now in the field.

The machine is built and powered for steady operation at speeds best adapted to the nature of the soil and other operating conditions. A 50-horsepower Waukesha four-cylinder motor of the heavy tractor type supplies ample power. Gearing gives a choice of four road speeds, forward or reverse, four bucket line speeds and 48 digging speeds, ranging from six inches to 33 feet per minute. Average speed under normal working conditions will range between 10 and 15 feet of trench per minute.

Intermitter

THE TAYLOR INSTRUMENT COMPANIES

The Taylor Instrument Companies, Rochester, New York, has announced an intermitter, which was designed to control the flow cycle of gas lift systems. The intermitter can be adjusted to admit the repressuring medium into the well for the required length of time at specified intervals. The instrument also can be adopted to produce a series of quick "kicks" immediately before admitting the full pressure. If it becomes necessary at any time to alter the original repressuring schedule, it may be easily accomplished without replacing or cutting the cam.



Taylor Intermitter

Instead of employing the conventional "fixed" cam to time the intermittent operation of a diaphragm valve or other diaphragm-operated devices, the intermitter has a circular cam on which the proper number of actuating lugs may be placed, which is the number of lugs corresponding with the number of operations to be performed during the rotation of the cam. As many as 20 lugs may be used. The duration of each operation is adjustable by moving the bracket carrying the nozzle (upper left corner of case) so that its scribe mark is opposite the desired time interval on the scale. The higher the position of the nozzle, the shorter the period of nozzle closure and the duration of the operation.

The actuating cam is driven by a powerful spring-driven clock, available with one-hour, six-hour, 12-hour and 24-hour rotation. Electrically driven clocks with identical periods of rotation also can be supplied. The instrument is available in two types, the reverse-acting with lugs close nozzle, applying pressure to the diaphragm, and the direct-acting, with lugs open nozzle, relieving pressure from diaphragm motor. An overpressure release protects the diaphragm motor from excessive pressures in the event of reducive-valve failure. Either compressed air or gas at a constant pressure of 25 pounds per square inch may be used.

Squeaks *from the* BULL WHEEL

Boss (to office-boy, who is half an hour late)—"You should have been in here at eight o'clock."

Office-Boy—"Why, what happened?"

"Gee, pop, there's a man at the circus who jumps on a horse's back, slips underneath, catches hold of its tail and finishes up on the horse's neck!"

"That's easy. I did all that the first time I ever rode a horse."

"Would you give 10 cents to help the old ladies' home?"

"What, are they out again?"

An old darky was sent to the hospital, and one of the nurses put a thermometer in his mouth, to take his temperature. Presently, when the doctor made his rounds, he asked:

"Well, Mose, have you had any nourishment?"

"A lady done gimme a piece of glass to suck on, boss, but I'se still pow'ful hungry."

From your references, I see that you've had four places in the last month.

Yes, sir, but that shows how much in demand I am.

"I suppose your home-town is one of those places where everyone goes down to meet the train."

"What train?"

"Does this village boast of a choral society?" inquired the new resident.

"Well," said the postmaster, "I can't say that we boast of it. We just suffer in silence like."

Overheard in the Foreign Department:

"Was your father a college man?"

"Yes, but we never mention it. The college he went to had a rotten football team."

Minister (at baptism of a baby): "His name please."

Mother—"Randolph Morgan Montgomery Alfred Van Christopher McGoof."

Minister (to assistant)—"A little more water."

"An old school friend of yours asked to be remembered to you—a man called Robinson."

"Don't remember him."

"Short chap with whiskers."

"I never went to school with a short chap with whiskers."

She was buying a clock. The shop assistant calculated that he had spent over three-quarters of an hour trying to satisfy her needs. For the twentieth time he handed her a different design.

"This, madam," he said, "is an ideal pattern. I'm sure is cannot fail to please you. The working is simple. Each time the hour strikes, a little bird hops out and calls 'Cuckoo'."

The customer shook her head.

"That certainly wouldn't do," she said.

The assistant groaned inwardly.

"And why not, madam?"

"It takes me all my time to attend to my pet canary. I can't be bothered with having to look after two birds."

During the day, Mrs. Brown discharged her old maid and hired a new one, who answered the doorbell when Mr. Brown arrived home in the evening. He carried a bunch of roses, which he handed to the mand, saying: "Present these to Mrs. Brown, telling her I want to see her at once."

"All right," said the maid, "but you better make it snappy, because she expects the old man any minute now."

"Did you hear, dad, they just caught the biggest hotel-thief in Chicago?"

"What hotel did he run?"

Teacher was teaching her class of young pupils in astronomy. The moon was the subject.

"Now," she said, "some people believe that there are fifty million people on the moon—" She paused as a titter of laughter reached her ears. "William," she snapped at one of the boys, "what are you laughing at?"

"I was just thinking, teacher, what a squeeze it must be up there when there's only a quarter moon."

A couple of New Yorkers were driving back East from California. About noon, in the middle west, they ran into a dust storm but it didn't bother them much for their throats were far from dry. The chauffeur turned on the lights and kept going.

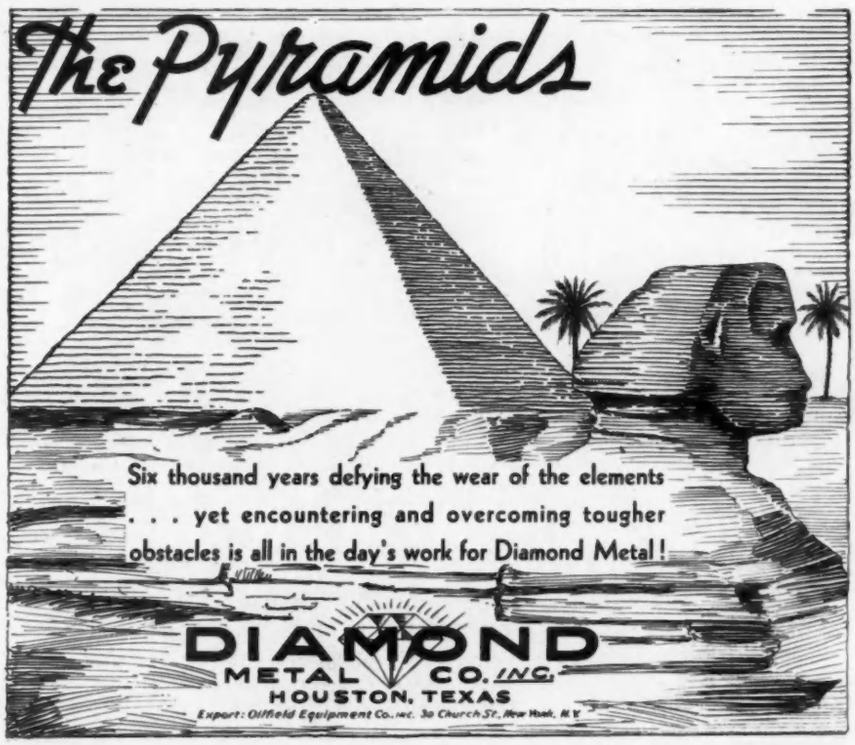
Finally, they came out into clear air again. The purer air revived one of the rear seat occupants who looked at his watch and poked his companion in the ribs. "Shay," he said, "Joe's driving pretty fast. He drove through that night in less than three hours."

Two fellows in a car went through the automatic signals and were stopped by a policeman.

"I'm sorry," said the driver, quick-wittedly, "but I happen to be a doctor. I'm taking a patient to the asylum in a hurry."

The officer was suspicious and looked penetratingly at the passenger. But he, too, was quick-witted, and looking up at the policeman with a seraphic smile, whispered, "Kiss me, Sergeant."

They got away with it.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. . . yet encountering and overcoming tougher
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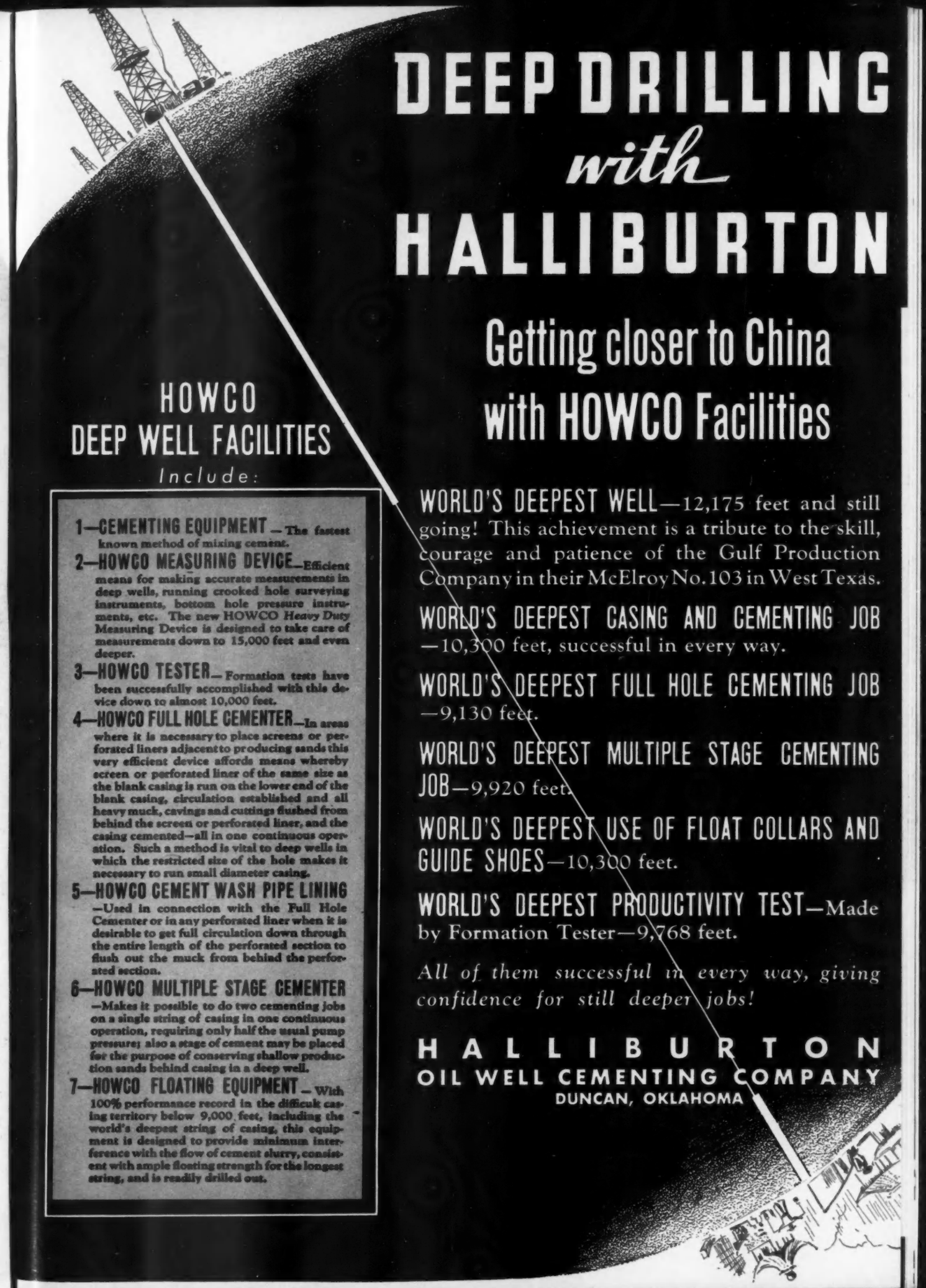

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Getting closer to China with HOWCO Facilities

WORLD'S DEEPEST WELL—12,175 feet and still going! This achievement is a tribute to the skill, courage and patience of the Gulf Production Company in their McElroy No. 103 in West Texas.

WORLD'S DEEPEST CASING AND CEMENTING JOB—10,300 feet, successful in every way.

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WORLD'S DEEPEST MULTIPLE STAGE CEMENTING JOB—9,920 feet.

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All of them successful in every way, giving confidence for still deeper jobs!

HALLIBURTON
OIL WELL CEMENTING COMPANY
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HOWCO DEEP WELL FACILITIES

Include:

1—CEMENTING EQUIPMENT—The fastest known method of mixing cement.

2—HOWCO MEASURING DEVICE—Efficient means for making accurate measurements in deep wells, running crooked hole surveying instruments, bottom hole pressure instruments, etc. The new HOWCO *Heavy Duty* Measuring Device is designed to take care of measurements down to 15,000 feet and even deeper.

3—HOWCO TESTER—Formation tests have been successfully accomplished with this device down to almost 10,000 feet.

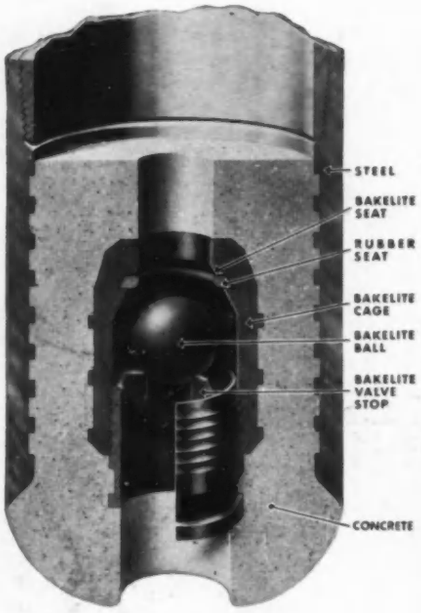
4—HOWCO FULL HOLE CEMENTER—In areas where it is necessary to place screens or perforated liners adjacent to producing sands this very efficient device affords means whereby screen or perforated liner of the same size as the blank casing is run on the lower end of the blank casing, circulation established and all heavy muck, cavings and cuttings flushed from behind the screen or perforated liner, and the casing cemented—all in one continuous operation. Such a method is vital to deep wells in which the restricted size of the hole makes it necessary to run small diameter casing.

5—HOWCO CEMENT WASH PIPE LINING—Used in connection with the Full Hole Cementer or in any perforated liner when it is desirable to get full circulation down through the entire length of the perforated section to flush out the muck from behind the perforated section.

6—HOWCO MULTIPLE STAGE CEMENTER—Makes it possible to do two cementing jobs on a single string of casing in one continuous operation, requiring only half the usual pump pressure; also a stage of cement may be placed for the purpose of conserving shallow production sands behind casing in a deep well.

7—HOWCO FLOATING EQUIPMENT—With 100% performance record in the difficult casing territory below 9,000 feet, including the world's deepest string of casing, this equipment is designed to provide minimum interference with the flow of cement slurry, consistent with ample floating strength for the longest string, and is readily drilled out.

You cannot be safe without IT



What about Strength?

Any piece of Baker Cement Equipment is safe beyond the collapsing strength of the casing upon which it is run. That safety factor affords complete protection.

What about Valve Efficiency?

The Bakelite Ball Valve floats in rotary mud or cement slurry and at the first reversal of pressure provides a leakproof double seal against a rubber ring backed by Bakelite. The passageways permit unrestricted circulation of cement without losing the "wash down" action. That efficiency assures good cementing.

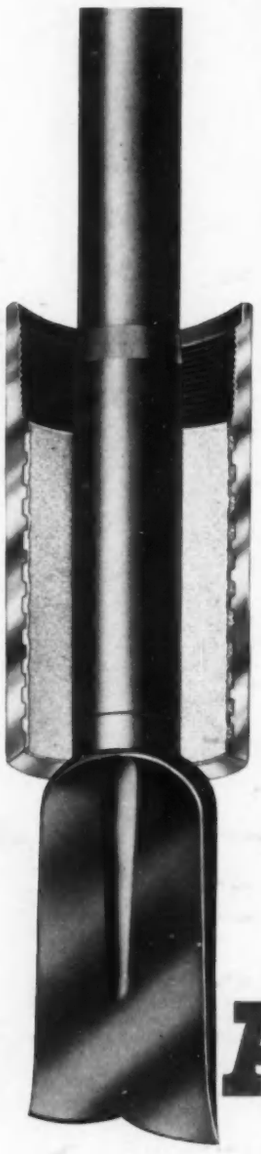
AFTER YOUR casing has been safely guided, floated and landed . . . after it has been cemented successfully and the cement has set . . . then comes the vital operation of drilling up the plug and valve assembly.

Will they drill out easily with minimum wear on the bit and with minimum vibration on new cement behind the casing and shoe . . . will they drill up into small, harmless fragments which circulate out of the hole with rotary mud . . . will the hole be left entirely free from metal or other dangerous fragments which prevent immediate coring and may interfere with further drilling?

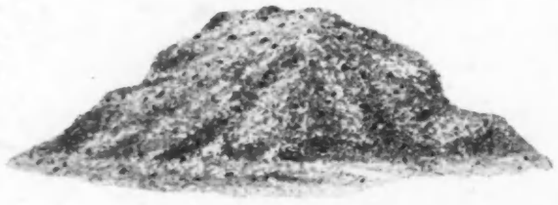
With Baker you are sure and you are safe—Baker has It—the vital advantage of Drillability.

The plug and valve assembly in all Baker Cement Guiding, Floating and Cementing Equipment are made entirely from a special-formula concrete, and a minimum amount of Bakelite, both of which are easily, rapidly and completely drilled up—as shown below—and circulate out of the hole with the rotary mud.

You can be sure you have It when you buy Baker.



DRILL ABILITY



You can get complete information from your 1935 Composite Catalog, or from the complete Baker Catalog which we will gladly send promptly upon request.

BAKER CEMENT EQUIPMENT

for guiding—floating—cementing casing

BAKER OIL TOOLS, INC.

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